JANUARY 1926 — Nº 240

Monthly

A Reference for Buyers

# HITCHCOCK'S MACHINE TOOL BLUE BOOK

25,000

Controlled Circulation

Published By

HITCHCOCK PUBLISHING CO.

508 So. DEARBORN ST.

CHICAGO

FOR INDEX SEE LAST PAGE

# Get this new bulletin!

## easy to read - 26 Illustrations

**Subject: Ball and Roller-Bearing Reliance Motors**

Our new Bulletin No. 4000 is written and illustrated to give real information to the man who wants to know more about the construction and use of motors with anti-friction bearings.

***Just give us your name and address on the side of this page and we shall be glad to mail a copy***

**Reliance Electric & Engineering Co.**
**1050 Ivanhoe Road, Cleveland, Ohio**

***Branches:***

Boston, New York, Philadelphia, Pittsburgh
Cincinnati, Detroit, Chicago, Birmingham, Ala.

*We specialize in motors, sizes 1/2 to 200 h. p. constant and adjustable speed D. C.; squirrel cage and slip ring A. C.*

# Order Your High Speed Drills from This Booklet

Recently a prominent shop superintendent gave orders that, hereafter, no one in his plant was to order "high speed drills," but always to specify "Cle-Forge High Speed Drills."

We'll cheerfully send you a copy of this booklet telling all about the famous "Cle-Forge" Drills. A request for it places you under no obligations whatever.

The CLEVELAND TWIST DRILL COMPANY CLEVELAND NEW YORK-CHICAGO-LONDON

TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES

***Manufacturers, also, of***

Carbon and High Speed Drills for every purpose; "Mezzo" Super-Carbon Drills; Hand, Jobbers' and Shell Reamers; "Peerless" High Speed Reamers; "Paradox" Adjustable Reamers; "Quick-Set" Reamers; Chucking Reamers for Turret Lathes; Counterbores; Countersinks; Sockets; End Mills; and the "Ezy-Out" Screw Extractors.

# CLE-FORGE

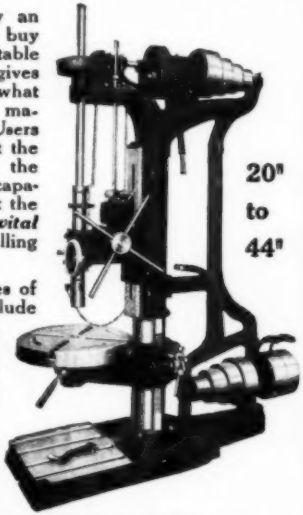
TRADE MARK REG. U.S. PAT. OFF.

# Note Record of "Aurora" Tests

When you buy an "Aurora" you buy ***results.*** The table printed below gives some idea as to what this up-to-date machine will do. Users have found that the "Aurora" has the greatest pulling capacity or power at the drill point, the ***vital part*** of any drilling machine.

Exclusive features of the "Aurora" include a tapping attachment, fool-proof table, automatic release worm-wheel and enclosed positive gears.

***Write for the attractive price with complete illustrated description***




**DRILLING TESTS OF 24" AND 26" DRILL**

| Size of Hole | Spindle Speed | Feed per Minute | MATERIAL |
|---|---|---|---|
| 1" | 360 | 9⅛" | Cast Iron |
| 1" | 360 | 6¼" | Mild Steel |
| 1¼" | 350 | 6¼" | Mild Steel |
| 1¼" | 350 | 9" | Cast Iron |
| 1¾" | 225 | 5¼" | Mild Steel |
| 2" | 225 | 6¼" | Cast Iron |

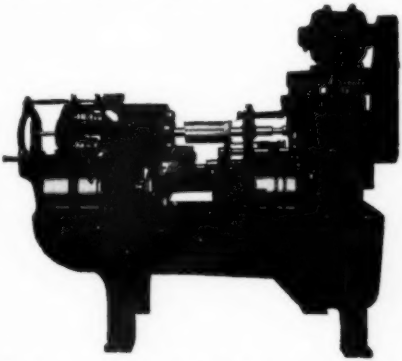
# The Aurora Tool Works

DIVISION THE OESTERLEIN MACHINE CO.

**3303 Colerain Ave., Cincinnati, Ohio**

# Something New!

## in Multiple Spindle Automatics



Here's a new multiple spindle automatic that's already shown many concerns great savings in the costs of producing duplicate parts from bar stock.

Do you know about this machine? If not, write for the Model C Acme Bulletin or better yet send B/P or Samples for Guaranteed Production Estimates.

Address Dept. C. S.

## The National Acme Co.

Cleveland, Ohio

New York Detroit Chicago

# Lees-Bradner 5-A Gear Generator

**The Work Travels Past the Hob**

**100% EFFICIENCY ON**

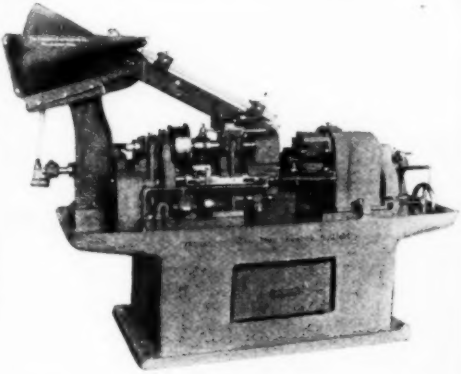
**Spur—Spiral and Worm Gears**

**Sprocket Wheels Spline Shafts**

***Circular No. 39***

## LEES-BRADNER CO.

**CLEVELAND, OHIO, U. S. A.**



# "This is Production"

**2800 Pointed and Threaded ½" Bolts Per Hour— One Operator!**

WHEN USING

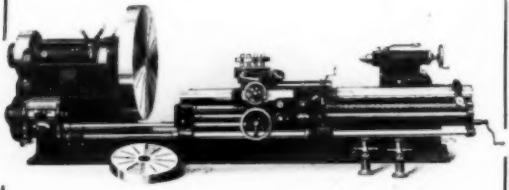
Four Economy Automatic Combined Pointing and Threading Machines.

**Capacity ¼"x1" to ¾"x5½" Bolt and Cap Screws.**

**The Economy Engineering Company**

**WILLOUGHBY, OHIO**

# LeBLOND SLIDING BED GAP LATHES

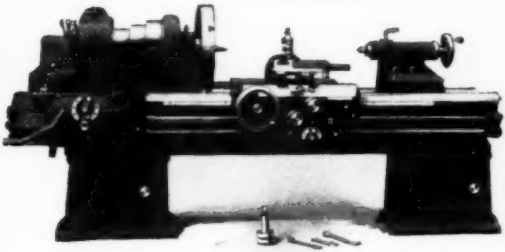


Designed to meet the requirements for a heavy duty universal lathe of adjustable capacity. The bed is of compound form, in two sections, the upper section being slidable along the lower section, providing an increased swing over the gap and any necessary distance between centers.

Built in three sizes with cone driven or geared headstock, described in detail in our literature.

**THE R. K. LeBLOND MACHINE TOOL COMPANY**

**CINCINNATI, OHIO**



# 20" Instantaneous Change Gear
# ENGINE LATHE

Double Back Geared Double Plate Apron. Any Pitch Or Feed Within Its Capacity Instantly Obtainable Without Removal Of A Gear.

Tailstock of the cutaway type, which permits swivelling of compound rest parallel with the shears.

Double Plate Apron with the mechanism so arranged that longitudinal and cross feeds cannot be engaged when screw-cutting.

Gear Box entirely enclosed, with steel gears throughout.

***Send for full particulars—sizes 18" to 36"***

THE

## Boye & Emmes Machine Tool Co.

**2245 Spring Grove Ave.**

**CINCINNATI, OHIO**

# Cutter and Tool Grinders

## For All Classes of Work

No. 12
Cutter and Tool
Grinder

The Nos. 10, 11 and 12 give a range of sizes that will take care of any kind of cutter and tool work as well as light cylindrical grinding.

*Let us recommend the proper sizes for your work*

**LANDIS TOOL COMPANY**

**Waynesboro, Pa.**

New York Office: 30 Church Street  Detroit Office: 5928 Second Blvd.
Chicago Office: 618 W. Washington Blvd.

**Motor Driven No. 2 Universal Tool Grinder**

# GRAND RAPIDS Universal Cutter, Tool and Drill Grinder

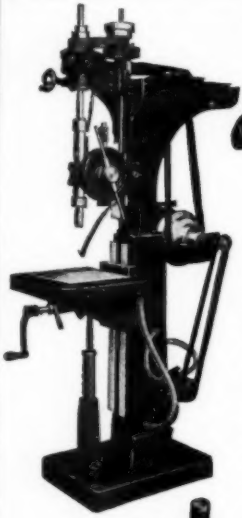
**With Self-Contained Motor Drive, Eliminating All Overhead Work.**

An ideal machine for the shop using drills, cutters and reamers, for whom single purpose machines or larger machines would be an extravagance.

Any work within the capacity of the machine can be handled with maximum convenience. Remember it grinds drills in addition to cutters and tools.

***BULLETIN ON REQUEST***

**Gallmeyer & Livingston Company**
**342 Straight Ave., S. W.**
**GRAND RAPIDS, MICHIGAN, U. S. A.**



# DO YOU KNOW

THE

## Avey-matic

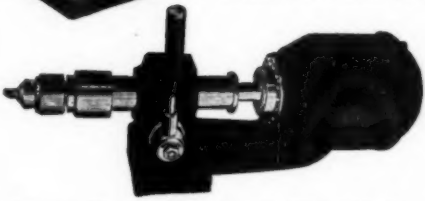
can be operated

**FULL AUTOMATIC**
**SEMI AUTOMATIC**
**or HAND FEED?**

In the full automatic all movements of the spindle are continuous, operator only changing the work.

In the semi-automatic, the feed trips, returns the spindle but the feed is re-engaged by hand.

The feed can always be disengaged at any point of the stroke or advanced ahead of the feed by means of the hand lever.



**Three Sizes of Motor Drilling Units**

**CAPACITIES 3/8", 5/8", 7/8" in C. I.**

Can be attached to tables of regular AVEY machines for side hole drilling while regular operation is being performed. - - - Can be mounted in any position.

**GET OUR CATALOG OF LATEST DRILLING PRACTICE**

**THE AVEY DRILLING MACHINE CO., - CINCINNATI**

# *Don't Forget—*

**Wood, Fibre, Rubber, Paper, Mica, Bakerlite**

as well as the ordinary metals can be drilled to advantage on the

**Leland-Gifford Super-High-Speed Ball Bearing Drilling Machine**

**Spindle Speeds Up to 10,000 R. P. M.**

Write us about this Drill to speed up your drilling operations.

***Ask for Bulletin No. 502***

## Leland-Gifford Co.

Worcester, Mass., U. S. A.

***BRANCH OFFICES:***

Boston Chicago New York
Cleveland Detroit Rochester

# La Salle Grinders

## American Style C T A For Dry Grinding Only

Unexcelled as a dry grinder for twist drills. Extra large drill holder has capacity from 1" to 3½".

American Style W T A is arranged for both wet and dry grinding.

All American Grinders are now equipped to handle taper shank drills.

## No. 1 Plain and Surface Grinder

**(Micrometer Adjustment)**

| | |
|---|---|
| Grinding wheels | 8"x1" |
| Between wheels | 15" |
| Height to spindle center | 40" |
| Table surface | 8"x14" |

**Has vertical travel of 12" on guides, ¾" by micrometer, and may be raised to within 2" of spindle center. Wheel grinds to center of a surface 9" wide.**

***Let us know your grinding requirements***

# LaSalle Tool Company

LaSalle, Illinois, U. S. A.

FOOTBURT

# A Single Spindle Footburt Sipp Sensitive Drill

**Made in three sizes of single and multiple spindle models**

## More holes with this machine

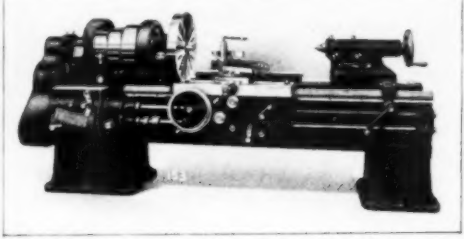
Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

***Write for No. 650 Folders***

**The Foote-Burt Company, Cleveland, O.**

FOOTBURT

# CINCINNATI LATHES



are supplied with either standard or special tools and fixtures to handle your jobs most economically. If you desire to avoid repair bills and obtain longest satisfactory service, our catalog and prices will interest you. Furnished in sizes 16" to 30" inclusive, Cone Type or Geared Head. Our experience of over 20 years' specialization always at your service.

**THE CINCINNATI LATHE & TOOL CO.**
**3207-3211 North St., Oakley, Cincinnati, O.**

Gold Seal
SEBASTIAN LATHES
GUARANTEED CORRECT
TRADE MARK

*Time tests all things*

We have built good value LATHES for 40 years.

*Write for details on our new*
**Gold Seal Lathes**

**The Sebastian Lathe Company**
**1000 Culvert St., Cincinnati, O., U. S. A.**

# A High-Grade Shaper

## Within the Reach of Every Shop

7 in. Shaper Stroke

3½ in. Slotter Stroke

***The Rhodes Shaper and Slotter***

is an accurate, dependable, high-grade tool in every respect. It is within the reach of every shop, because the parts are made smaller than in the shapers in common use, with a price that's lower in proportion. It will not do heavy machining, but is more readily manipulated on work within its capacity, for which it is unexcelled. There is nothing better made for tool and die work.

***Ask your dealer or write for CATALOG H22***

**The Rhodes Mfg. Company**

**984 Park Road, Hartford, Conn.**

SHAPERS — RHODES — SLOTTERS

# Cleveland Open Side Planers

**26" to 72"**

The Column of the first **CLEVELAND** Open Side Planer, built 25 years ago, was a true box form without openings in the sides or tops, just as it is built today.

Over 1060 installations to date.

Hammered, Heat Treated Steel Gears, Shafts and Pinions; Forced Feed Lubrications to V's if desired; Power Rapid Traverse.

***Send for descriptive circular***

**The Cleveland Planer Co.,** 3148 Superior Avenue, CLEVELAND, OHIO

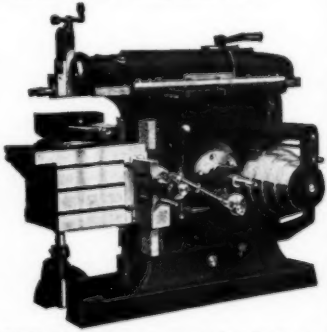
***Established in 1900***

# SHAPERS

12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

Belt Shifter Regular Equipment All Cone Driven Shapers.

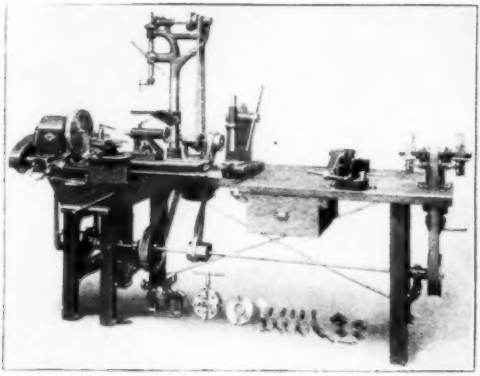
32" Back Geared Crank, Single Pulley Drive.



**The Smith & Mills Co., Cincinnati, O., U.S.A.**

# No Gingerbread! No Frills!

The "ARTISAN" Metal-Worker is simply a compact combination of modern shop equipment for the Machinist, Millwright, Auto Repairman, Electrician, Vocational Instructor and Experimenter.

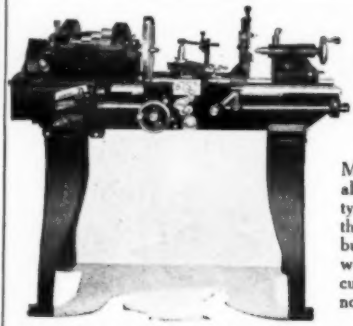


Each machine is completely equipped—ready for work. Yet there is nothing extra—nothing unnecessary. Even the little No. 3 "Jacobs" Chuck is fitted with an Arbor which enables it to be used interchangeably in the Drill or in the Tailstock of the Lathe.

**Today's program calls for "Sensible Economy."**
**Better get details of the "Headliner on the Bill."**

## Artisan Manufacturing Company

**837 West 6th Street, Cincinnati, Ohio**



# Another Sidney Lathe

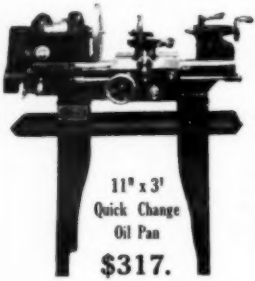
Our 11" x 4' Medium Pattern, all geared head type. It is up to the minute with built-in features which insure accuracy and economical service.

*Write for catalog and prices on the complete line of Sidney Lathes. Address Dept. 1801*

**The Sidney Machine Tool Co.**
**Sidney, Ohio**

SIDNEY for SERVICE

# Monarch Jr. Lathes



11" x 3'
Quick Change
Oil Pan
**$317.**

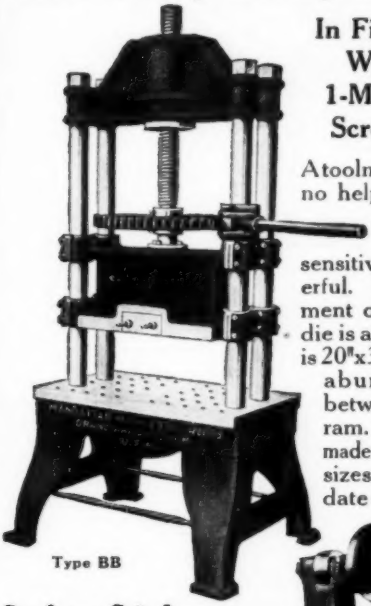
are the smallest members of the Monarch lathe family. Yet they are the "biggest little lathes" built.

The Monarch line of lathes includes all sizes and types from the little 9-inch Junior lathe to the big, massive 30-in. lathe. In this line there is a lathe to fill your requirements at the price you want to pay.

*Send for Catalog*

**The Monarch Machine Tool Co.**
**206 Oak Street, Sidney, Ohio**

# Save Many Costly Hours—



Type BB

## In Fitting Dies With Our 1-Man 4-Post Screw Press

A toolmaker requires no help in handling any dies. Machine is sensitive, rigid, powerful. Perfect alignment of punch and die is assured. Table is 20"x36", and there's abundant room between bed and ram. Press is also made in three smaller sizes. All up-to-date cost reducers.

## Surface Grinder

Is accurate, runs silently without chatter. Both feeds have graduated dial. Has all latest adjustments and attachments.

***Details and price on request***

**JARECKI MACHINE AND TOOL CO.**

Successor to Manhattan Machine & Tool Works

Dept. A. GRAND RAPIDS, MICH.

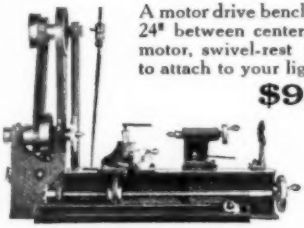
**Hardinge Brothers, Inc.,** have become so well known as makers of Thrust Collets and Draw Back Chucks and have established such a reputation for quality and workmanship, that the best machinists don't want to use any other kind.

The name "HARDINGE" stamped on the piece is your guarantee.

**HARDINGE BROTHERS, Inc.,**
**1770 Berteau Avenue,**
**CHICAGO, ILLINOIS**

# Just-Rite Lathes

**Made in Sizes from 10-in. to 20-in.**



A motor drive bench lathe, 10" swing, 24" between centers, complete with motor, swivel-rest and pan, ready to attach to your light socket.

**$98**

**JUST-RITE** for turning, boring, milling and drilling (not screw cutting).

**Order one by express. Weight, 230 lbs.**

**A. V. Carroll Machine Tool Co.,** Norwood, Cincinnati, O.

# The Old Way

Results in damaged shafts, bushings, pins and other parts, as well as accidents to the workmen.

## With Nicholson Arbor Presses

all of these losses and accidents are eliminated, and considerable money is saved. Made in five sizes that take work up to 20" in diameter and 31" high and exerting pressures up to 9,000 lbs. Can make immediate delivery on all sizes and will be glad to send any size on trial.

## Nicholson Expanding Mandrels

**Save Space**—A set of nine does the work of several hundred solid mandrels.

**Save Time**—Instantly fit any hole, round or square, from ½" to 7".

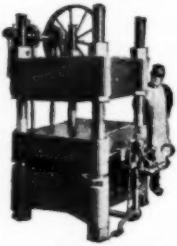
**Save Labor**—No need to caliper a dozen or so solid mandrels, or turn one down to fit a certain j.b.

*Write for literature and 30-day trial plan*

**W. H. Nicholson & Co.**
**117 Oregon St., Wilkes-Barre, Pa.**

# Do You Know

## That Hydraulic Presses Can Be Made To Operate As Fast As Geared Presses?



**WE SPECIALIZE—**

**on Quick-Acting Presses with Automatic Control.**

**WE BUILD—**

**Presses in Any Size and for Any Purpose Requiring Pressure.**

***Write For Catalog***

## LOURIE MFG. CO., Springfield, Ill.

## Atlas Arbor Presses

**For All Forcing Operations**

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

***Write for our Bulletin—showing 30 different sizes***

## Atlas Press Co.

***Department B,***

**Kalamazoo, Michigan**

# Danly Die Sets

(Endorsed by nearly 3,000 users)

**Save dies**
**Save time**
**Save upkeep cost**
**Save first cost**

Completely assembled, ready for immediate use. Precision tools for entire range of work. Save 20 to 50 per cent in first cost.

Die Sets in the "knock-down" for assembly by purchaser. Shipped in plainly marked cartons convenient for stock and use. Interchangeable, standardized parts. Ask for the facts.

***Write, Wire or Phone Nearest Office***
***Immediate Deliveries From Stock***

## Danly Machine Specialties, Inc.

**4913 Lincoln Avenue, Chicago, Ill.**

**Detroit, Mich.**
**1537 Temple Ave.**

**Long Island City, N. Y.**
**35 Wilbur Ave.**

# Towsley Trucks PAY 500%

**Every Year On Their Cost Price**

Glad to tell you how

**TOWSLEY TRUCKS**

repay their cost every two to three months.

Every style for every need.

*Write for facts and figures; you'll be glad you did*

**John T. Towsley Mfg. Co., Cincinnati, Ohio**

# I Am "Johnny-on-the-Spot"

**Who Out-Lifts 8 to 10 Big Men**

It's no trouble at all for one man and the ever-ready

**CanTon Portable Crane, Hoist and Truck**

to move machinery and heavy stuff which ordinarily would require the combined efforts of 8 to 10 men. More safely, too.

*The several sizes are shown in Booklet E-8*

**CANTON FOUNDRY & MACHINE CO., Canton, Ohio**

New York Office: 203 East 15th Street, Second Floor

# TRIBLOC CHAIN HOISTS

## Use them in every department

Profitable operation of expensive heavy machinery requires quick set-ups.

In every department, where heavy loads are handled frequently—such as placing gears on gear cutters, lifting work to planer beds, etc.,—Tribloc Chain Hoists soon prove their economy. Their use cancels waste of time, labor and idle machines—it shortens machining time from "floor to floor."

Easily controlled—safe—positive—Tribloc Chain Hoists can reduce the number of payroll dollars exchanged for mere brawn.

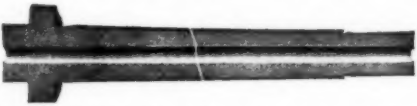
Learn more about these sturdy load-lifters by sending for Catalog 7-B.

**Ford Chain Block Co.**

**2nd & Diamond Sts.,**
**PHILADELPHIA, PA.**

# Give Us A Trial

**On your next order for Hollow Bored Forgings and Steel Shafts**



When it comes to furnishing such items as ***Lathe Spindles, Piston Rods, Rams, Clutch Shafts,*** etc., you will find us a reliable source of supply, with dependable products, prompt deliveries and the right prices. If there's anything you need now, send along your blueprints and we'll take good care of you. Thank you.

**American Hollow Boring Co.**
**Erie, Penna.**

# Vanderbeek Universal Joints

—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

***Write today for our Descriptive Catalog.***

**American Tool Works, Inc.**
**Hartford, Conn., U. S. A.**

# Taylor Steel Universal Joints

**for slow speed drives**

The best SAE No. 102 Machine Steel is used in the manufacture of the Taylor Joint.

The Taylor Joint is cylindrical, with the forks the same as the hubs. It is of simple design, being composed of only six parts.

***A solid, durable joint at low cost.***

***Send for special circular.***

# BOSTON GEARS

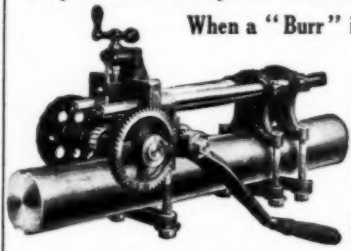
**Boston Gear Works Sales Co.**

**Norfolk Downs, Mass.**

**Boston New York Philadelphia Cleveland Chicago**

# Why dismantle your shafting—

## When a "Burr" is available?



This handy, portable keyseater is always ready—whether for an emergency case or routine work. Cuts accurate keyways up to 12" long anywhere, in any position, in shafts up to 5" diameter.

Operated by hand or motor. Over 9,000 already in use. Your choice of seven sizes. Why not order one now and be prepared?

**JOHN T. BURR & SON**
**422 Kent Ave., Brooklyn, N. Y.**

# In Your Hand

## And

# Not In Our Factory

is where this tool should be. It mills your keyseats. Just the tool you need. It attaches to your drill press like a straight shank drill. Our Catalog O belongs to you and not in our office.

**National Machine Tool Co.**

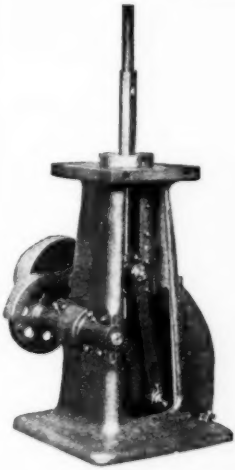
2268 Spring Grove Ave., Cincinnati, O.

# Catlins Cut Keyseating Costs

## There's a Size for Every Need

**NO MATTER** whether you have to cut a thousand keyseats or only a few, a "Catlin" will cut them all to even better than a 1000th of an inch accuracy.

But it is more than accurate—it is also rapid. It cut a keyseat 6" long, 1" wide and 7/16" deep in a cast steel hub, in 3 minutes; this was in the course of an ordinary day's work, with no attempt made to estabish a record.



## Great Economy

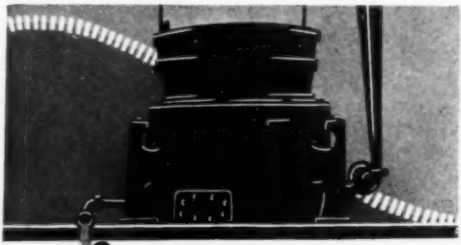
On some classes of work it is possible to keyseat piece after piece without clamping down the work, or stopping the machine.

Catlins are making new records right along—why not have them save time and money in your shop?

***Let us mail you the interesting folder, describing the various sizes, including their capacities***

## Chattanooga Machinery Company

**2401 Bennett Ave., Chattanooga, Tenn.**



**6 to 15 gallons per load—three or four loads per hour.** ***Write for catalog.***

**Tolhurst Machine Works**
**Troy, N. Y.**

# Reclaim Your Oil And Save Money

**No. 500—Capacity: 1.7 Bushels**

### It's Simple Arithmetic

The saving in 20 installations averaged 2.17 gallons of oil per 100 lbs. of chips, after draining.

### The Curtis Oil Extractor

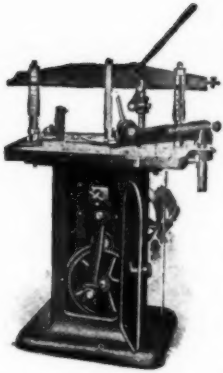
shown in this picture, holds about 250 lbs. of chips. Figure for yourself the oil saving from each full load. *It's a safe investment with amazing returns.*

The Curtis Centrifugal Oil Extractor is made in two sizes, belt or motor drive. The illustration shows our larger size, with motor on spindle.

***Write for Catalog and prices***

**The Leon J. Barrett Co.,** Worcester, Massachusetts

***Successors to Curtis Machine Co.***



# Keyseating at Less Expense on the "Davis"

**HERE'S** a high grade, moderately priced machine that will do your keyseating quickly, accurately and economically, giving thoro satisfaction at all times.

***Please read the table below***

**Sample of Cutting Time on Gears**

| Size of Blank | Kind of Stock | Size of Keyway | No. at 1 Chucking | Cutting Time |
|---|---|---|---|---|
| 3¼"x¾" | Steel | 3/16"x3/32" | 3 | 1 min. 30 sec. |
| 6¾"x1⅞" | C. Iron | ¼"x⅛" | 1 | 20 sec. |
| 2 5/16x9/16" | Steel | ¼"x⅛" | 4 | 40 sec. |
| 3"x4¾" | Steel | 5/16"x5/32" | 1 | 1 min. 40 sec. |
| 3"x7/16" | C. Iron | ⅛"x1/16" | 4 | 30 sec. |
| Oil Groove | C. Iron | ⅛"x2⅞" | 1 | 30 sec. |

THE "DAVIS" is made in two sizes to cut 1/16 to 1-inch keyways in pulleys, gear blanks, bell cranks, crank handles, etc., etc., and for slotting, oil grooving and work of a similar nature. It is simply designed, ruggedly built, easily handled and a big producer. Can equip for motor drive.

***Let us mail you the Folder, which contains a lot of interesting, practical information***

**Davis Keyseater Company**

**255½ Mill St., Rochester, N. Y., U. S. A.**

# 3 to 30 Gals. per Minute!

## With GUSHER Pumps

With a minimum of power these Machine Tool Coolant Pumps operate at maximum efficiency. And they stand the wear of constant use in a way that will agreeably surprise you.

"GUSHERS" are ball bearing, have no gears, no foot or relief valves, no packing nuts, need no priming, and are not injured by grit or small chips.

Capacities, 3 to 30 gallons per minute. Furnished with individual motors for any current, also for belt drive.

***Get the Catalog and prices***

**The Ruthman Mchy. Co.**
**528-534 E. Front St.**
**CINCINNATI, OHIO**

# FEDERAL
# DIAL COMPARATOR

**—CAPACITY 6"—**

With Indicator
Graduated .001"

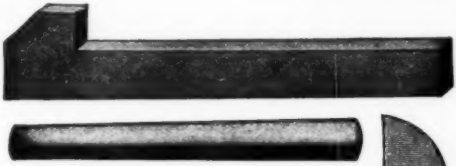
**$33.50**

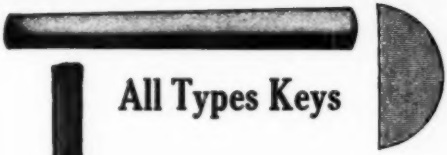
With Indicator
Graduated .0001"

**$48.50**

***SEND FOR COMPLETE CATALOG***

**Federal Products Corporation**
**Elbow & Chestnut Sts., Providence, R. I.**





# All Types Keys

CRANKSHAFTS
Forged or Finished

CONNECTING RODS
Forged or Finished

MACHINE KEYS
Quick delivery—ready to drive

WOODRUFF KEYS
Ship from Stock

TAPER PINS
Ship from Stock

***Send us your inquiries***

**Wm. Leard Co.**
**6th Ave.**
**New Brighton, Pa.**

# Steel Spacing Washers—

**Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel**

Stock sizes for arbors of following diameters: ⅜, ½, ⅝, ¾, ⅞, 1, 1⅛, 1¼, 1⅜, 1½, 1⅝, 1¾, 1⅞, 2, 2¼, 2½, 3, 3½ and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

***Ask us to send samples; you'll like them***

## Detroit Stamping Company

**3443 West Fort St., Detroit, Mich.**

# *Save Time Setting Gang Milling Cutters*

**Eliminate Thin Washers**

**Hardened and Ground**

PATENTED

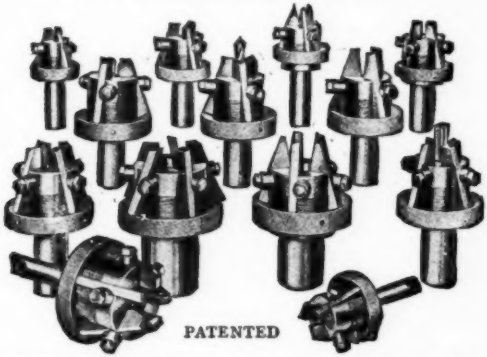
***"Wear-Ever" Adjustable Spacing Collars*** permit setting cutters to the thousandth part of an inch without removing from the arbor.

***Stock sizes for ¾" to 2½" arbors, sent on approval They are adjustable in 12 steps of 2/1000 inches***

**SCULLY-JONES & CO.** *TOOL DIVISION*
**13th and Robey Streets** **CHICAGO, ILL.**

# A Saving Hint for 1926

***"Use Genesee Hollow Mills!"***



PATENTED

THEY SAVE—Because the seven sizes cover the entire range from ⅛" to 2", which ordinarily requires hundreds of solid tools;—because one set of blades outlasts three to five solid tools, and can then be replaced at small cost.

THEY SAVE—Because they are ideal for finishing castings, forgings, etc., and more economical than non-adjustable mills for every purpose. Genesees cut up to 15" a minute in steel. They are stronger than solid tools, and as they cannot change in size, they are thoroughly dependable.

NOW MADE in six different styles, from the heavy roughing Style "B" to the accurate finishing Style "F." We also make Style "N" Mills for all Brown & Sharpe automatics, and special size and style to your order. You will find them all real cost reducers.

***Start the New Year right—write us about your needs***

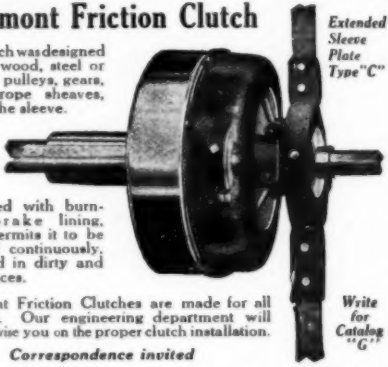
## Genesee Manufacturing Co., Inc.

**Rochester, N. Y., U. S. A.**

***Manufacturers of Genesee Rapid Production Tools.*** ***Est. 1908***

# Edgemont Friction Clutch

This clutch was designed to drive wood, steel or cast iron pulleys, gears, drums, rope sheaves, etc., on the sleeve.



*Extended Sleeve Plate Type "C"*

It is lined with burn-proof brake lining, which permits it to be operated continuously, and used in dirty and dusty places.

Edgemont Friction Clutches are made for all purposes. Our engineering department will gladly advise you on the proper clutch installation.

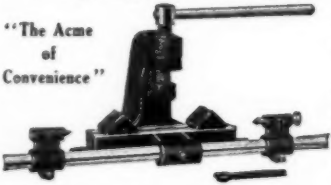
*Write for Catalog "G"*

*Correspondence invited*

**Edgemont Machine Co., Inc.,** DAYTON, OHIO

# The Springfield Straightening Press

"The Acme of Convenience"



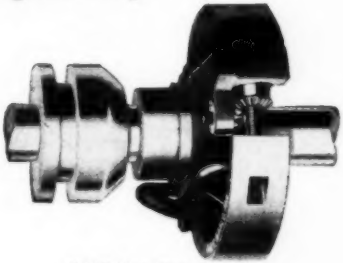
Invaluable in the tool room, also for straightening crank and cam shafts and other automobile parts.

The arrangement of this press is the *acme of convenience*, as any work within the range of centers may be tested and straightened without unnecessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon.

*Write for complete description of this handy tool*

**The Springfield Machine Tool Co.**
**Springfield, Ohio**

# A Clutch of Capability



**CMT Unit Expansion Type**

A clutch is good, or not so good—in proportion to its capability—its effectiveness in transmitting power, continuously or intermittently, as required, without appreciable loss, and with dependable endurance.

The Conway is a clutch of capability because it meets these primary conditions completely, and is besides so simple, so free from complications, that it is practically fool-proof, and, as nearly as a clutch ought to be, wear-proof. It adds a valuable selling feature to any machine, and is the source of unending satisfaction to both the user and the man who sells it to him.

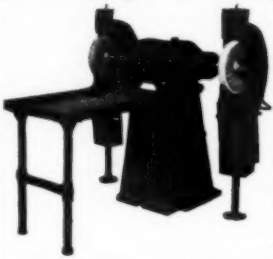
It will commend itself to you, if you know just what it is, which is the reason we want to send you our detailed drawings and description. May we? No cost or obligation, of course.

*Why not drop us a line today?*

## The Conway Clutch Company

**1951 Riverside, Cincinnati, Ohio**

# Polishing—Buffing—Grinding



## The CISCO

LATHES are direct motor driven and self contained. Automatic push button control is standard equipment. Motor, housing and ball-bearings fully protected against dust, oil and dirt. Frequency changers used successfully, and motor does not generate excessive heat. "Ciscos" are built for smooth running and long life. 3, 5, 7½ and 10 h. p. *Write for Circular and prices today.*

**The Cisco Machine Tool Company,** CINCINNATI, OHIO

# Steel Bearing Balls

**Brass, Bronze, Aluminum and Monel Metal Balls**

**Steel Burnishing Balls**

**Burnishing Cones**

**Burnishing Pins**

**Immediate Shipments from Stock**

**Ask for Price List 23-H**

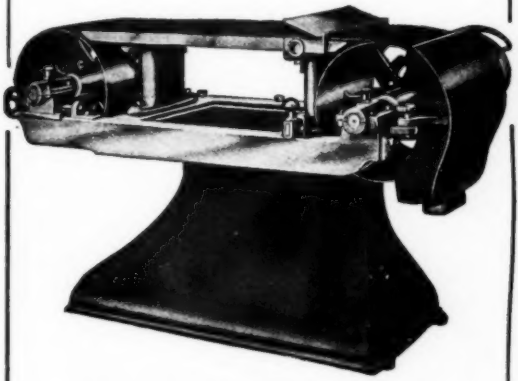
## The Abbott Ball Company

**Elmwood District, Hartford, Conn.**

# PEERLESS
## SURFACING MACHINES

Will reduce grinding and finishing costs and give you better work.

Can be substituted for many expensive milling machine and planer operations.



**Made also in vertical and bench models.**

***Send for large folder***

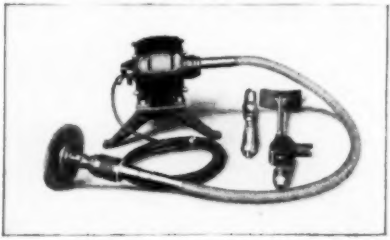
**PEERLESS SURFACING MACHINE CO., Inc.**

**TROY, N. Y.**

**In Canada: A. R. WILLIAMS MACHINERY CO., Toronto**

# The Whirlwind Buffer and Grinder

**Will cut the cost on any unhandy grinding or polishing job**



***Send for our latest bulletin***

**Stow Flexible Shaft Co.,** 3454 Ludlow St., Philadelphia, Pa.

***The Best Since 1876***

**Type 6**

# New "AUTEX" Extension Reel

## 1925 Model

**Don't Forget the Swivel Joint Feature**

Permits of carrying the lamp in any direction.

Rapidly finding a place in large Industrial Plants, Machine Shops and Service Stations.

**Now equipped with Belden Rubber Cord Approved by the Underwriters**

***Write for descriptive circular***

**The Cincinnati Specialty Mfg. Co., Inc.**

**1903 Powers St., Cincinnati, Ohio**

# Why Continue The Waste?

**The "Good Enough" of Yesterday**
**HAS BEEN OUTCLASSED**
**In Methods for Truing Grinding Wheels**

The largest factories in the U. S. are adopting our truing tools and are saving at least one-half of their former diamond cost.

## You Can Do the Same

Any good mechanic can use these tools successfully by following the simple instructions.

## The Saving is Worth While

The tools are not an experiment, as one concern has several hundred of them in use every day and there are scores of concerns using them on their best work.

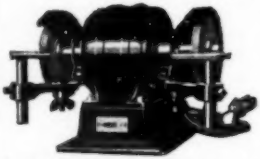
**BETTER—FASTER**
**and Decidedly Less Cost**

***Ask us for information***

**The Precision Truing Machine & Tool Co.**
**CINCINNATI, OHIO**

# *Don't Be Robbed—*

## By Dull Tools



**BODINE**
**Portable Electric**
**TOOL GRINDERS**

***Make it easy to keep tools sharp***

BODINE-BUILT Grinders are equipped with SKF ball bearings, heavy wheel guards, tool rests quickly adjustable to any position, and everything necessary to accuracy, steady performance and ease of handling. A "Bodine" in every department insures sharpest tools throughout the entire plant.

***Write for a copy of "Eight Outstanding Advantages"***

**The Bodine Electric Company**
**2256 West Ohio St., Chicago, Ill.**

# Perpetually Sharp Tools

This ideal is most nearly realized with the improved

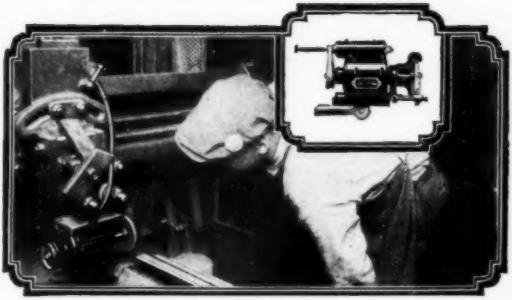
**Thompson Universal Grinder**

Has no equal for all plain, surface, edge, die, cutter and internal grinding. Capacity is 10"x36".

***Write for Illustrated Bulletin today***

**Manufactured By**

**THE THOMPSON GRINDER CO., - Springfield, Ohio**



# Helping Willys-Overland Take America Off Its Feet

IN THE Willys-Overland plant at Toledo, Dumore grinders play an important part. How well they fulfill every demand made of them—how accurate and adaptable they are for all varieties of grinding work, is convincingly illustrated in the hood panel forming—die grinding job pictured above. And when you consider that this is but one of many difficult operations successfully handled by Dumore grinders at the Willys-Overland works, you'll agree that these efficient tools assist materially in "taking America off its feet."

It is reasonable to assume that what Dumore grinders can do for Willys-Overland they can do for any other manufacturer. Six distinct styles of Dumore grinders, each with individual speed ranges, provide a grinder with the correct cutting speed for any grinding need. Dynamically balanced armatures and selected ball bearings in Dumore grinder motors eliminate vibration—permitting maintenance of grinding limits as close as .0001, without taper, bell-mouth or chatter marks. Operating on alternating or direct current, they are especially useful in shops supplied with two varieties of power current. Portable, they save the cost of tearing down expensive set-ups.

Why not find out what they can do for *you?* Our new catalog tells an interesting story of Dumore grinders and their uses. By asking for it *today* you'll get it quicker than by delaying until tomorrow. Write now!

**Wisconsin Electric Co., 43 Sixteenth St., Racine, Wis.**

**DUMORE HIGH SPEED GRINDERS**

Style "WC"

Style "O"

The Hinge

Style "G"

Style "A"

**Gits Gravity and Wire Wick Feed Oilers**

**Gravity Feed**—flushes the bearing.
**Wire Wick Feed**—gives desired prolonged feed.
**Wire Wick**—replaces waste or felt.
Made in Standard sizes.

Style "L"

***Write for Catalog No. 20***

Showing 255 full size illustrations with detail dimensions.

**GITS OIL CUPS**

Oil cups for every lubricating need. State style and size in which you are interested, and we will send free samples and catalog.

Style "U"

Style "T"

**GITS BROS. MFG. CO**
**1940 SO. KILBOURN AVE., CHICAGO**

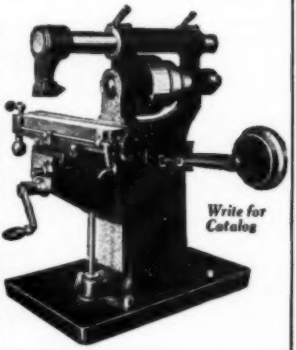
# This Power Feed Miller $220

**BURKE No. 4**

**Longitudinal feed..... ....8"**
**Traverse feed ..... .....4"**
**Vertical feed.....8"**
**Table surface .....3½"x16"**

Can be equipped with Index Centers, Vertical Milling Attachment, Slotting Attachment, Draw-in Chuck Attachment, and vises with plain or swivel base or quick acting. Very accurate.

We make both power and hand feed machines at prices ranging from **$125 to $220.**



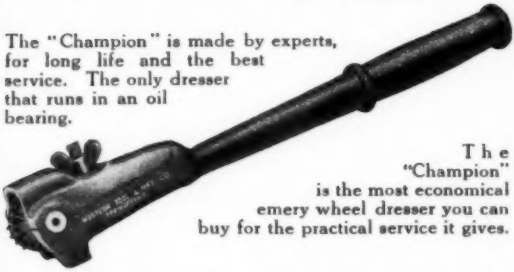
***Write for Catalog***

**The BURKE MACHINE TOOL COMPANY**
**297 East 16th Street**
**CONNEAUT, OHIO**

# "Champion" Emery Wheel Dresser

## Outlasts a Dozen Cheaper Dressers

The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



The "Champion" is the most economical emery wheel dresser you can buy for the practical service it gives.

The ***cutters*** are made of a special steel, heat-treated and tempered by a special process.

The ***sleeve,*** furnished with each set of cutters, revolves on the spindle and the cutters in turn revolve on it, providing a more perfect bearing for the cutter wheels.

The patented ***spindle bearing,*** which is made of steel and thoroughly hardened, serves as a bearing for spindle and a guide for cutting wheels, and it cannot turn in the handle; makes wobbling impossible.

The patented ***handle*** is heavy and strong, designed for long service, efficiency and economy.

The patented ***handle cap*** eliminates the old-fashioned set screw and serves as an upper-clamp for spindle bearing. Further, there are no moving parts. On account of absence of wear, the life of handle and handle cap is indefinite.

## Our Catalog also describes

Champion Tool Holders, Champion Expanding Mandrels, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

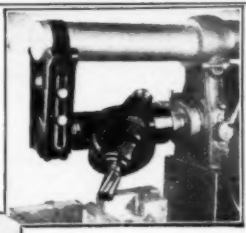
**The Western Tool & Mfg. Co.**

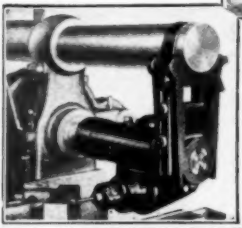
**SPRINGFIELD, OHIO**

Reduce Set-ups on intricate work with the

# New Hevy-Du-T

## Universal Milling Attachment



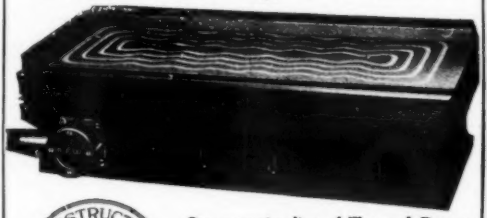


Allows the spindle to operate at any angle in any plane. On or off in three minutes. Think of its many uses, then write for details.

PORTER-CABLE MACHINE CO.

Salina St., Syracuse, N.Y.

# "D & W" Flat & Rotary Magnetic Chucks



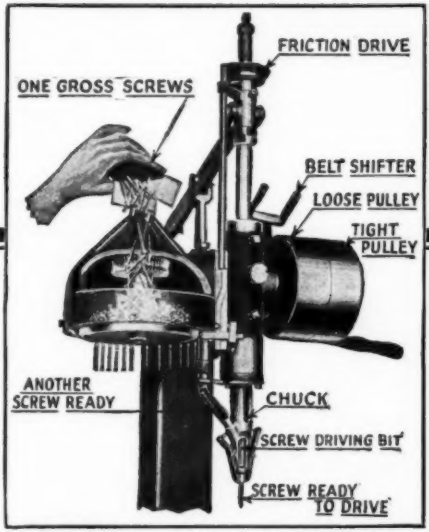
INDESTRUCTIBLE D&W MAGNETIC CHUCKS REG. U.S. PAT. OFF.

Our extensive line of Flat and Rotary Magnetic Chucks covers a wide range. They are big time savers in holding iron and steel pieces for grinding, planing, shaping and milling. Write for illustrated folder and price list.

**J. & H. Electric Co.**

161 Clifford St., Providence, R. I.

# It Saves All Handling Of Screws




**Showing the Magazine Feed of the Reynolds Automatic**

As ***the Magazine Feed*** saves all handling of screws, the Reynolds Automatic Screw Driving Machine ***saves just that much of the operator's time,*** leaving both hands free to handle stock. Result, a boy or girl easily ***drives 800 to 1,200 screws an hour.*** Merely pressing a foot lever drives the screws home so perfectly that some Reynolds users have been able to reduce their screw sizes.

Advise us the dimensions over all of your work and length and gauge of screws used, and let's see if we cannot get together for our mutual profit—especially ***yours.***

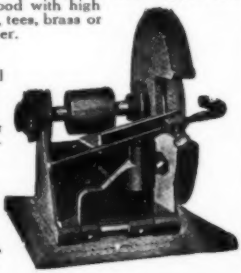
## The Reynolds Machine Company

**Dept. H. H.,** **Massillon, Ohio**

# Peter's Abrasive Metal Saw

## *Cuts Quicker—Cuts Cheaper*

THIS FAST MACHINE saves a lot of valuable time and material. Cuts quickly and accurately, square or otherwise, at option of operator. Eliminates nicking and breaking, prevents waste of stock. Equally good with high speed steel, angles, channels, tees, brass or iron. Doesn't draw the temper.



**8" Size $22.50, with C. S.**
Splendid for tool room. Cuts all high-speed steel up to ⅞" square.

**12" Size $60, with C. S.**
Cuts up to 2¼" diameter, round or square, at any angle up to 45 degrees. Ball bearing.

***15 Days' Free Trial***

**Write us or ask your dealer**

**PETER BROTHERS MFG. CO.**
**115 Railroad St., Algonquin, Ill.**

**Send for this FREE CHART**

# New Improved "RACINE" JUNIOR

**WORM GEAR DRIVE** direct from motor is now used. All gears enclosed and running in oil. New Improvements in combination with old superiorities make Racine Junior absolutely free from vibration. The quietest, smoothest running as well as the fastest and most accurate metal cutting machine of its capacity.

**Rear view showing motor mounting**

**Capacity 4 in. Can be used as a portable. Not necessary to bolt to floor. Runs from electric light or power circuit. Ask for bulletins on Racine High Speed Metal Cutting Machines of every Capacity to 15 in.**

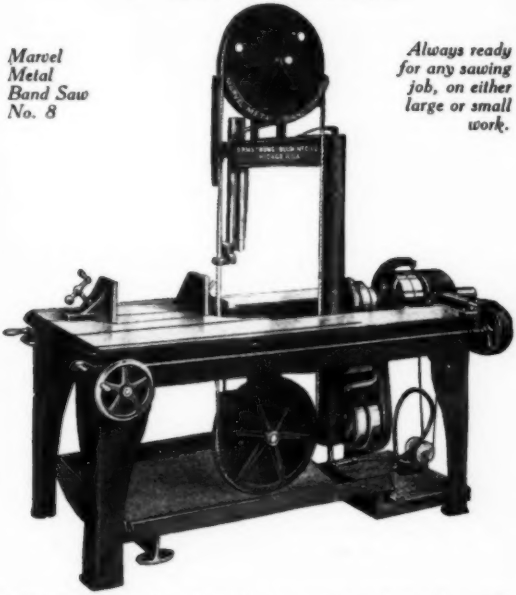
**Use "Racine" H. S. Wood and Metal Band Saw Blades & "Racine" H. S. Tungsten Power and Hand Hack Saw Blades.** ***Catalog H.***

**Racine Tool & Machine Co.**
**1429 Junction Av., Racine, Wis.**
**"STANDARD THE WORLD OVER"**

# The Marvel Metal Band Saw Takes the Lead

*Marvel Metal Band Saw No. 8*

*Always ready for any sawing job, on either large or small work.*



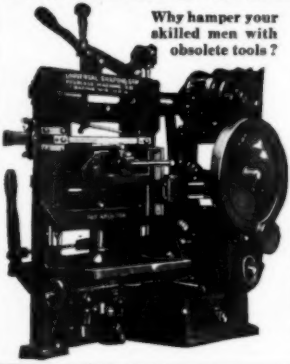
UNIVERSAL in its adaptation to every variety of metal sawing. It saws bars, beams, channels, tubes, etc., rapidly and accurately, and does the finest tool room work. Saws at an angle either way without swinging the bar around the shop. Has big capacity up to 18 in. The large bed gives lots of room for material and tools. A saw for every need.

***Write for Circular or the Complete Catalog of MARVEL Saws***

**Armstrong-Blum Mfg. Co.**

**341 N. Francisco Ave., CHICAGO, ILL.**

# —PEERLESS—
# UNIVERSAL SHAPING SAW



**Why hamper your skilled men with obsolete tools?**

**Different Principles**
**Greater Efficiency**

*Give The Most Of—*

**Speed**
**Accuracy**
**Blade Economy**

**SIZES:**
**6"x6"--9"x9"--13"x13"**

**PEERLESS**
**HIGH SPEED HACK-SAWS**
**6"x6" 9"x9" 13"x16"**
**Sturdy--Efficient--Reliable**

**Peerless Machine Co.**
**1609 Racine St.**
**Racine, Wisconsin**
*Write for Details*

# POWELL BLOW GUN

**Designed to dispense AIR with utmost economy**

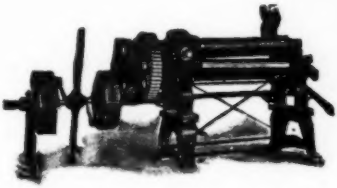
**Used for cleaning machines, machine tools and work benches**

**Made with different tips for special requirements.**

***Circular on request***

## The Wm. Powell Co.

**2525 Spring Grove Ave., Cincinnati, O.**



# BELOIT

*INITIAL TYPE*

## Sheet & Plate Bending Rolls

The Beloit Initial Type Rolls are built in a large number of sizes and capacities, and for a great variety of work.

The modern design of the Beloit Rolls of this type makes it possible for the operator to curve plates completely to the edge, thus getting away from the undesirable flat near the edge of the sheet.

The quick-acting cam lever device raises the top roll for the removal of completed cylinders.

Individual and simultaneous adjustment of both ends of the forming roll can be furnished, and the machine can be arranged for third roll drive, when necessary.

Those in the market for Bending Rolls cannot afford to fail to give us their specifications, and to get our quotations.

*We solicit your inquiries for Bending Rolls, either Initial Type as shown above, or the Pyramid Type machine, as well as for Punching and Shearing Machinery, both hand and power.*

**Hendley & Whittemore Co.**

**100 S. State St., BELOIT, WIS.**

# It Costs Less To Cut

**rounds, squares, flats and to**

## Punch Those Holes

**on**

## "The Bench" No. 3

**Combination Shear, Rod Cutter & Punch**

**CAPACITY 5/8"**

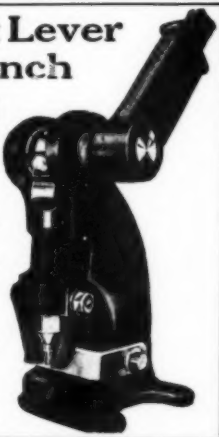
**$45.00 f. o. b. Phila.**

**THE BENCH MACHINE TOOL CO.**

***Makers of "THE BENCH" Tapping Machines***

**222 N. 13th Street, Philadelphia, Pa.**

# T.H.L. Front Lever Bench Punch



Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

***PRICE $45***

Extra Punches, 20 cents each; extra dies, 30 cents.

Capacity 13/32" thru 1/4" steel, 11/32" thru 5/16". Punches up to 1/2". Weight, 70 lbs.

***A good buy; can ship promptly***

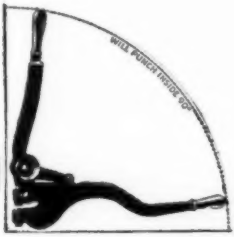
**T. H. LEWTHWAITE MACHINE CO.**

*(Est. 1890)*

**417 E. 31st St., NEW YORK**

# Imperial Punch No. 8

## Roller Bearing



**CAPACITY ¼-INCH THROUGH ¼-INCH**

| | |
|---|---|
| Punch in center of | 4¼ inches |
| Length over all | 25½ inches |
| Weight | 16 lbs. |
| Height of gap | ⅜ inches |
| Depth of throat | 2⅛ inches |

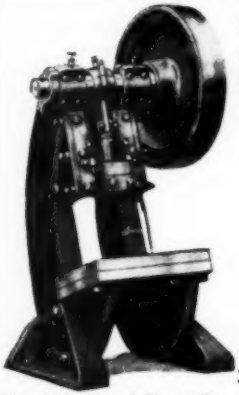
We can furnish base for Bench purpose. Operating handles will not become disengaged. Roller Bearing. Drop Forged. No cams to wear out.

Just right for standing seams or sky-light work. Large throat clearance.

***WRITE FOR PRICES***

**WHITNEY METAL TOOL CO.**

**95 Forbes St., Rockford, Ill.**



Trade **Verson** Mark

# Punch Presses

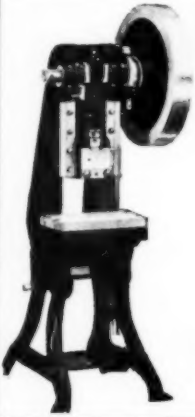
**For Accurate Work**

Ask your dealer to show you the **"Verson"** Line of Power Presses, or write direct for circulars.

## La Salle Machine Works

**3013 S. La Salle St., Chicago, Ill.**

**Manufacturers of Power Presses, Angle Shears and Dies**



# Husky, Powerful

speedy Punch Presses deliberately designed for High Production work.

**All Types and Sizes**

*Write for Catalog*

## Rockford Iron Works

**Rockford, Ill.**

# Spring Press

**(UNIFORM BLOW)**

## Foot or Power

**Single and Double Action**

These Presses are used in large numbers by manufacturers of electrical devices, jewelry, cutlery, hardware, clocks, radio sets, toys, instruments, etc.

The Uniform Blow a special feature—increases production and eliminates costly inspection.

**The Taylor & Fenn Co.**

**Hartford, Connecticut, U. S. A.**

# ORDER ONE ON 30 DAYS' TRIAL.

## THE G-S COMBINATION VISE

**3**
**Tools for the Cost of**
**1**
**VISE, V-BLOCKS AND ANGLE PLATE**

The most practical Vise for general Machine Shop use

***A GREAT TIME AND LABOR SAVER***

For holding work in Drill Press, Milling Machine, Shaper or Planer.

PATENTED

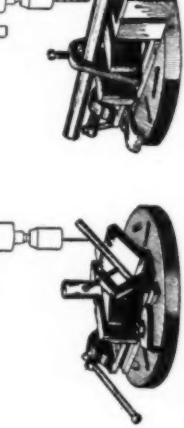
| | Dimensions | |
|---|---|---|
| No. 1 | | No. 2 |
| 2½-in. | Jaw Opening | 3-in. |
| 1-in. | Depth of Jaws | 1-in. |
| 1-in. | Width of Jaws | 1½-in. |
| 1½-in. | Jaw Overhang | 1½-in. |
| 6-lbs. | Weight | 10½-lbs. |

PRICES

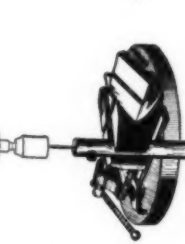
$15.00 ..... Complete Vise ..... $22.00
F. O. B. Factory

A few of the Many ways the G-S COMBINATION VISE can be used

Work is held in V's with the aid of special clamp—quick to set up and remove—no blocks, strips or bolts are necessary.



Shaft held on the angle plate for drilling holes at any degree. Also short shaft held in the V in vise. This converts Vise to a handy jig for duplicate parts.

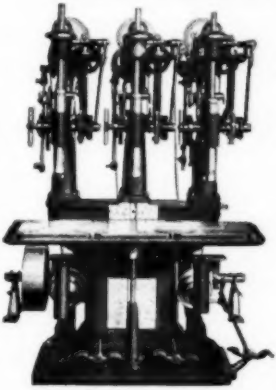


Long shaft can be held in the overhanging jaws. Here the V serves as a jig for centering shafts, etc.

**Germanow-Simon Machine Co.**
**547 West Avenue**
**Rochester, -:- -:- New York**

# Used Much On Auto Parts

# and Agricultural Implements



**If you are at all interested in lower drilling costs, you should investigate the Rockford Automatic Gang Drilling Machine**

*Built with 2, 3, 4 and 6 Spindles*

*Box Column Type*

***Satisfied Superintendents*** endorse this modern, ultra-convenient machine. It produces dependable, accurate work in large volume. Enables operators to establish new low cost shop records.

***Automatic Return***—When each spindle has completed its operation it automatically returns to its highest position, where it remains until the starting lever is tripped, when it immediately drops to position above the work.

***By Removal*** of the stop pin in the cam, the spindle will immediately return to lowest position above work, and when tripped by automatic stop, will return to highest position and immediately drop again to work, repeating the movement automatically until the power is shut off. The spindle can be pulled ahead of the feed while in operation, a great advantage in drilling through a cored piece, piping or similar work.

***Ask for Circular. Glad to answer questions.***

**Rockford Drilling Machine Co.**
**ROCKFORD, ILLINOIS**

# Grant Noiseless Rotary Rivet Spinner

**One rivet per second.**
**Heads highly polished.**
**No hammer or tool marks.**
**The work is always uniform.**
**As tight or loose as desired.**
**Works in hard-to-get-at places.**
**It's easily operated by cheap help.**
**A boy or girl can manipulate it.**
**And—it's noiseless in operation.**

Write today for Catalog, showing several styles. Also send us samples of your work for riveting; we will return them with close estimate of cost.

**The Grant Mfg. & Machine Co.**
**C. E. Station, Bridgeport, Conn.**

**Hand-operated Self-tightening**

# Ettco

## Keyless—Ball Bearing Drill Chuck

## Continuous Grip

As the load increases the *Ettco* grips harder. It releases by hand—always. It saves time, drills—and chuck repairs are practically eliminated.

*Send for details of special exchange offer*

**Use ETTCOS on your electric drills**

**Eastern Tube & Tool Company, Inc., 600 Johnson Ave., BROOKLYN, N.Y.**

# Barker Wrenchless Chuck

*Developed and Manufactured by Thomas Elevator Co.*

**A complete Chucking Unit in itself. The Barker Wrenchless Chuck requires No Accessory Installations.**

*Made in two- and three-jaw styles, for every kind of turret lathe, automatic, and semi-automatic machine work.*

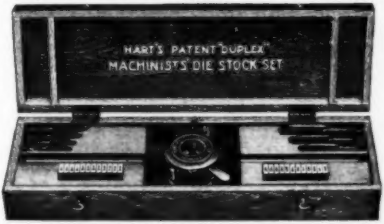
**Thomas Elevator Co.**

**Chuck Division**

**31 So. Hoyne Ave., Chicago**

# Adjustable Threading Dies FOR BOLTS AND RODS

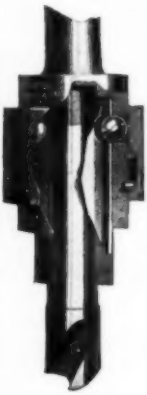
**Requiring no reversing to remove them.**
**Also adjustable centering jaws in the new pattern**




## "DUPLEX" Die Stock Set

**Each cutting edge on separate flat piece makes sharpening easy. Wide adjustment.**

**THE HART MFG. CO., 2319 E. 20th St., CLEVELAND, O.**



# TITAN QUICK CHANGE CHUCK

Its driving ability, quick change and safety features we believe make the "Titan" the nearest to drill chuck perfection ever designed.

Simply strike end of drill, and it is removed from collet with speed and safety, without key, hammer or special device. A one-armed man can do it.

The broken tang collet gives a positive drive to drills with broken tangs.

Sizes No. 0 to No. 5 for any taper shank drill, counterbore, reamer, etc.

*Write for descriptive price list*

**Titan Tool Company**
**Erie, Penna.**

# You Needn't Worry When Taps Break

## If You Have a Walton Tap Extractor

***When taps break*** at or below the surface of the work, don't wait for your men to dig out the pieces.

***Use a Walton*** Tap Extractor. Just insert the fingers in the work, give a few twists, and the tap backs out easily and safely. Sizes No. 8 to 1¼".

*Shipped on 60 days' approval*
*It's cheap insurance to order NOW*

**The Walton Company**
**Hartford, Conn.**

# Inventory Month

This is "Inventory Month." How many machine tools listed on your inventory —good machines when you installed them—have now outlived their usefulness because of improvements in design and construction?

Scan your inventory sheets and make sure that the obsolescence malady has not gradually crept into your equipment, penalizing the skill and initiative of your workmen.

Machines of today, results of inventive ingenuity, contain not only productivity, but a positive urge to the operator because of the ease with which they respond to his efforts.

Determine to make 1926 your record production year by installing modern

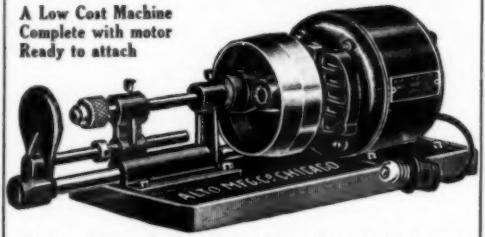
**MACHINE TOOLS—**
**The Master Tools of Industry**

WHY HAMPER YOUR SKILLED MEN WITH OBSOLETE TOOLS?

**NATIONAL MACHINE TOOL BUILDERS' ASSOCIATION**

# No. 1 ALTO Motor Driven High Speed Tapping Machine

**A Low Cost Machine Complete with motor Ready to attach**




This is just what you have been looking for—a self-contained, high-speed, motor-driven tapping machine, complete and ready to attach to light socket, and so simple in design that it sells at a low price. Capacity, 3/16" in brass, ⅛" in steel. ***Write for description and price.***

**We also have larger sizes motor driven Tapping Machines.**

**The Alto Mfg. Co.,** 1647-51 Wolfram St. Chicago, Ill.

# Tap in Safety!

Your tap breaking troubles—and expense—are over when you begin to use the dependable

## Woodstock Improved Safety Tapping Chuck

Tap is automatically released the instant it binds or touches bottom. Not only prevents tap breakage, but it saves lots of valuable time. Making good in government shops and big auto plants.

**Made in Five Sizes**

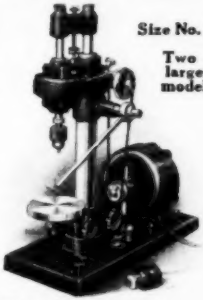
***Let us send you one to try out on your most difficult work***

**Peter Bros. Mfg. Co.,** 115 Railroad St., ALGONQUIN, ILL.

# A. M. Sensitive Drilling Machine

A strictly high-quality tool for drilling holes down to .010" in diameter. Ideal for tool room, laboratory and experimental department.

On production work it usually reduces costs 25% and upwards, and often doubles output.



**Size No. 1**

**Two larger models**

## Its users say

"We have searched for such a machine for years."
"I cannot praise it too much."
"The drills last twice as long."
"Your drill is superior to any other of which we know."
"Our workmen absolutely refuse to use our older machines."

***Write for complete information***

**Adolph Muehlmatt**

**434 Elm Street, Cincinnati, Ohio**

# Thor Electric Drills—

***Push the Button and It's Ready***

MEN who use a THOR Portable Electric Drill, tell us that it is exceptionally easy to operate and control. The easy operating push button switch enables the operator to start or stop at will.

The handle is comfortable and gives positive control over the drill.

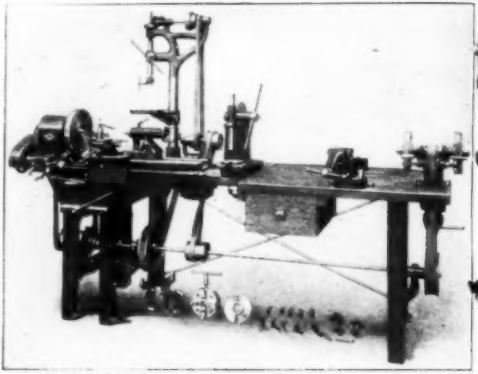
THOR Drills are built of easy running, rugged parts that insure durability and economy. Jacobs Chucks, ball and roller bearings, double-silk wound coils, and other high grade parts are standard equipment.

All THOR Electric Drills have a ground wire—an exclusive safety feature. Shocks are impossible!

**Independent Pneumatic Tool Co.**

**600 W. Jackson Blvd., Chicago, Ill.**

Jacob
Chu



JACOBS CHUCKS are standard equipment on all "Artisan" products

For complete informatio

ARTISAN MANUFACTURING COMPANY,

This advertisement i
interests of good Dri
by the makers of the C

Modern to

# "Artisan" Metalworker

## A Combination of Modern Shop Equipment

This is a sturdily constructed combination of modern tools for handling a large part of the work that comes into the average machine shop.

It consists of the following: an "Artisan" Lathe, with 11" swing over bed, 16" over gap, and 24" between centers; a 10" Drill Press of modern design; an Arbor Press with pressure capacity of one ton; a heavy duty Vise, and a specially constructed Grinder.

## A No. 3 Jacobs Chuck (17/32" Cap.)

is furnished as regular equipment. It is fitted with a No. 2 Morse Arbor, which enables it to be used interchangeably in the Drill Press or in the tailstock of the Lathe with this Combination Outfit, or in either the Drill or Lathe when sold as separate machines.

oducts

**nformation write today to the—**

**PANY, 837 W. Sixth St., CINCINNATI, OHIO**

*nent is published in the*
*Drilling Equipment*
*the Jacobs Chuck*

***odern tools are good investments***

# The "Utility" Removable Taper Shank Will Cut Your Costs

**A Detachable Taper Shank for Straight Shank Tools**

Designed to be used with all Straight Shank Tools, and represents the taper shank commonly used in solid or one-piece taper shank tools, such as drills, reamers, etc. Thoroly efficient, it will cut your tool costs. CATALOG?

**The J. C. Glenzer Co.**
6469 Epworth Blvd.
DETROIT, MICHIGAN

# Multiple Drilling

**On Your Single Spindle Drilling Machine**

Do your multiple drilling in *any pattern* on a single spindle drill with a

**U. S. Multiple Spindle Drill Head**

Made regularly with 2 to 6 adjustable spindles. Special heads made to your order, with adjustable or fixed spindles.

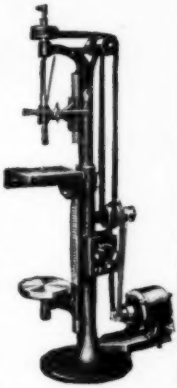
***Let us help you make a worth-while saving***

**The United States Drill Head Co.,** 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

# The U. S.

## A Complete Motor-Driven 14" Sensitive Floor Drill



**Price with motor, switch and belts - $115**

**Or without motor, switch and belts - $70**

Nothing better for the quick and accurate drilling of holes ½" and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

**The U. S. Machine Tool Co.**

**1952 W. 6th St., Cincinnati, Ohio**

# Sigourney Sensitive Drills

**All parts interchangeable**

Made with 1 to 4 spindles. Self-aligning ball bearings.

Extremely sensitive, accurate and durable, they are *quality* drills for those who buy tools for what they do.

The picture shows our No. 0 2-spindle ball bearing Bench Drill--a splendid tool.

***Booklets on both Plain and Ball Bearing Drills***

**THE SIGOURNEY TOOL CO., Hartford, Conn.**

# "Bridgebilt" Factory Seating and Tool Racks

A diversified line to meet requirements of every branch of industry.

**The Bridgebilt line will give long and satisfactory service**

*For illustrated price list and discounts write—*

**The Chicago Wire Chair Co.**

**619 No. LaSalle St., Chicago, Ill.** **No. 1010-SWS**

# Send Us Your Inquiries

We are always glad to forward a memo of any machinery or equipment for which you are in the market to all of our advertisers without charge.

## The Blank Form

enclosed in this book is for this purpose, and you are free to make use of it without obligation.

It has been the means of bringing many buyers and sellers together, to their mutual profit and satisfaction.

# "Better Equipment Saves Money—"

*That is why you should install the*

# "Rarefied" Dust Collector

—often saves 40% in power;

—repair costs are practically nil;

—operated on partial vacuum principle;

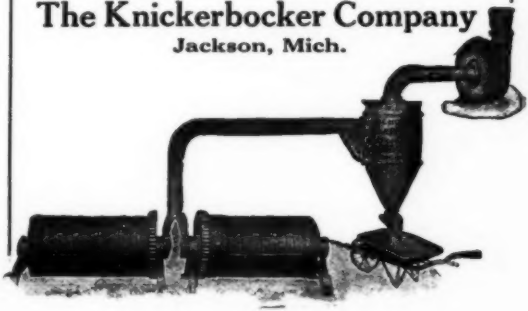
—has made good in some of the biggest plants in the country—one is now using thirty-four!

*List of big users—our explanatory booklet—an estimate by our experienced engineers—all gladly furnished on request. And it places you under no obligation whatever.*

**Draw up your chair and let's talk it over**

## The Knickerbocker Company

**Jackson, Mich.**



# For Sure Balance--

an absolutely level and solid "Way" is necessary

## Bowsher "Balancing Ways"

are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

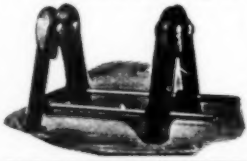
Standards adjustable to suit length of arbor.

**Three sizes for floor—one for bench use**

*Send for Catalog "F"*

**The N. P. Bowsher Co., South Bend, Ind.**

**Made in six sizes, for balancing anything that turns on a shaft, up to 24,000 lbs. weight**



## Anderson Improved Balancing Ways

Spindles are hardened, glass hard, so they do not become indented or lose accuracy. Chilled iron discs; especially sensitive bearings.

| "Swing" | 20" | 40" | 60" | 72" | 96" | 72" |
|---|---|---|---|---|---|---|
| Greatest distance bet. standards | 20" | 30" | 30" | 66" | 88" | 20' |
| Capacity in lbs. | 1000 | 2000 | 2000 | 5000 | 10000 | 24000 |
| Approx. shipping weight | 45 | 90 | 150 | 350 | 650 | |
| Code | Bead | Bid | Bis | Bib | Ben | |

*Any of above can be furnished with longer shafts*

**Anderson Bros. Mfg. Co.**

**1915 Kishwaukee St., Rockford, Ill.**

# Our Pipe Benders Meet The Demand

Ever since their invention our hand Pipe Benders have had a steady sale and have given universal satisfaction.

Recently, we have made some improved attachments that permit of a wider range of work and open up a new field in the kind of bending the machine will accomplish.

If you do pipe bending you will find our machine an economical, simple and very efficient appliance in reducing costs and doing better work. For 2" and under.

***We have a Bulletin waiting for you. Send for it now***

**Pedrick Tool & Machine Co.**

**3644 N. Lawrence St., Philadelphia, Pa.**

**Manufacturers of Cylinder Boring Bars, Portable Millers, Crank Pin Turning Machines, etc.**

Round

Flat

Oval

Fillister

# 'Economy' Screws

## Are QUALITY Screws

Carefully made of the best material, for which we pay an extra price. Heads are free from burrs. Just the thing for screw driving machines.

We carry all standard sizes, in iron or brass, with four styles of heads.

If you cannot get "ECONOMY" Screws from your jobber, please write us, giving your nearest jobber's name and address.

**Economy Screw Corp'n**
5213 Ravenswood Ave., Chicago, Ill.

**No Smoke** **No Fumes**

**Non-Poisonous** **Non-Inflammable** **Non-Explosive**

KASENIT No. 1
For Fine Work and Very Rapid Hardening
Sold in ½ lb., 1 lb., 3 lb., 5 lb. and 10 lb. tins

KASENIT No. 2
For General Hardening
Sold in 25 lb. and 50 lb. kegs

*ASK YOUR DEALER*

**KASENIT COMPANY,** 2 & 4 Stone Street NEW YORK, N. Y.

# Armstrong Lathe Dogs and Clamps

**Drop Forged Steel**
**All Sizes and Shapes**

The Dogs are thorobreds; the Clamps have lots of backbone. Screws are alloy steel.

***Complete Catalog Free***

**Armstrong Bros. Tool Co.**

**"The Tool Holder People"**

**308 N. Francisco Ave., Chicago, U. S. A.**

# *Strand* Rotary Files

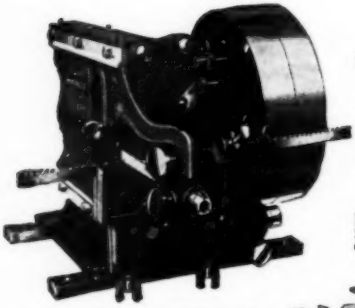
Used with Strand Flexible Shaft Machines. Are giving excellent service.

***Write for Catalog***

**N. A. Strand & Co.**
**5001 No. Lincoln St.**
**CHICAGO**

**HIGH SPEED**
**HAND CUT ROTARY FILES**

# A SHARP SAW
## *for 5¢*



**Model K-2**

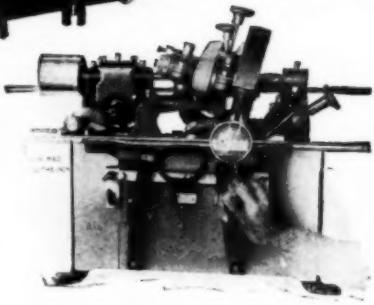
**IN ONE OPERATION**

**Files and Sets Medium, Spring or Soft Tempered BAND SAWS**

Fisher Body.....have...28
Simonds Saw....have...22
Gen'l Electric..have...25

**Model A-2**

**Sharpens and Salvages HARD Medium or Soft Tempered BAND SAWS**



**THAT IS WHY**

**20 concerns each have over 15 of these machines**

**CAN YOU SHARPEN A SAW FOR 5 CENTS? THESE MACHINES WILL**

# THE WARDWELL MFG. CO.

**Specialty Manufacturers of the largest line of Saw Filers made in the U. S. A.**

**108 Hamilton Ave., Cleveland, Ohio**

# Second-Hand Machinery

Lists of Second-Hand Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published under this heading at the rate of **50 cents a line**, across the page, each issue, plus **$2.50** for name and address. Minimum charge, **$5.00.** No display permitted in this department.

**Write directly to those offering the machines for sale** for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool Blue Book advertisers.

**Circulation of Machine Tool Blue Book, 25,000.**

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## FOR SALE BY

**Triangle Tool & Engineering Company,**
**815 E. Sample St., - - - - South Bend, Indiana**

Milling and drilling machine, 1½ Knight.
Shaper, 9" Milwaukee, crank.

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## FOR SALE BY

**Surplus Material & Machinery Co., 8735 Kercheval, Detroit, Mich.**

Bar shear, 14-ton.
Blue print outfit, Buckeye.
Grinder, No. 11 B. & S.
Grinder, 6x32 Norton.
Grinder, Baxter Whitney cylinder.
Radial drill, 36" plain.

---

## FOR SALE BY

**Bennett Machinery Co., - 30 Church St., New York City**

Cold saw, 42" Newton, heavy.
Drills, 14" to 30" Barnes and Rockf'd.
Keyseater, No. 4 Mitts & Merrill.
Lathe, 18"x 8' Hendey, yoke, q.c.g.
Miller, univ., No. 2 Milwaukee, cone.
Miller, univ., No. 3 Hendey, cone.
Planer, 54"x12' Pond, 4 head, belt.
Plate planer, 18' Niles.
Radial, 6' Pond, belted type, heavy.
Radial, 4' Dreses, cone drive.

---

## FOR SALE BY

**J. L. Lucas & Son, Inc., - 3 Fox St., Bridgeport, Conn.**

HAMMERS.

1-150 lb. Lingle upright helve hammer, with square anvil, 18"x6" drive pulley. Floor space 3'x5' 6", height 6'. Special price f. o b. Bridgeport $290.

Also the following Bradleys, which carry our guarantee:

3—60 lb. Bradley Cushioned Helve Hammers, $450. each f. o. b. Bridgeport.
1—80 lb. Bradley Cushioned Helve Hammer, $675. f. o. b. Bridgeport.
1—100 lb. Bradley Cushioned Helve Hammer, $750. f. o. b. Bridgeport.

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## FOR SALE BY

**The Reeve-Fritts Co., 558-560 Washington Blvd., Chicago, Ill.**

Die filer, No. 3 Barry, belt drive.
Drill, 24" Milwaukee, b. g., p. f.
Gear cutter, No. 1 Sloan & C. auto.
Grinder, No. 1 La Salle surface.
Grinder, No. 3 Rivett internal.
Grinder, 12" Besly disc.
Lathe, 14x6 Rockford, q. c. g.
Lathe, 16x8 Flather, q. c. g., taper.
Lathe, 22/36x8' gap, solid bed.
Miller, No. 0 LeBlond, plain.
Miller, No. 2B heavy B. & S.
Pipe machine, 12" Curtis & Curtis.
Planer, 32"x24"x6' Rockford.
Press, No. 3 Moore, o. b. i.

## SECOND-HAND MACHINERY

## FOR SALE BY

**Cyril J. Bath & Co., E. 70th & Mchy. Ave., N. E., Cleveland, O.**

### BORING MILLS—VERTICAL.

42" Baush, 2 swivel heads, 75%.
42" Bullard rapid production, with one swivel and one turret hd., 80%.
7' Betts, double head, 85%.
10'-16' Betts, 2 swivel and 1 center head.
60" Niles, 2 swivel heads and one internal boring head.

### BORING MILLS—HORIZONTAL.

No. 35-A Landis, floor type, horizontal, 90%.
No. 36 Landis, floor type, 3½" bar, 80%.

### DRAW BENCHES.

15,000 lbs. to 25,000 lbs. Waterbury-Farrel, United Engineering and Standard; 20" draw, with 18' extensions for mandrels, heavy cast iron; 85%.

### DRILLS—MULTI-SPINDLE.

4-spindle 20" Barnes, 85%.
4-spindle Barr sensitive, 85%.

### DRILLS—RADIAL.

4' & 5' Bickford.
No. 1, 8' wall radial.

### DRILLS—UPRIGHT.

24" Cincinnati, slid. hd., fric. bk. grs.
28" Cincinnati, sliding head, 80%.
32" Cincinnati, with tap. att., 75%.
24" No. 25 Foote-Burt, 90%.

### FORGING MACHINES AND BULLDOZERS.

1, 2, 3, 4 & 5 Bulldozers.
1½", 2" & 4" Forging machines.
250-ton Mesta steam hydraulic, 85%.

### GRINDERS.

No. 3 Brown & Sharpe univ. 70%.
10x36" Modern univ., and parts, 70%.
24" Diamond surface, 85%.
No. 4 Gardner, motor, disc, 85%.
18x96" Norton plain, 75%.
Mammoth shear blade grinder, capacity 100" long.

### HAMMERS

No. 2 Nazel, air, arranged motor dr.
100-lb. Bradley, helve, 75%—90% (3).
350 lb. Bement-Miles, steam forging.
800 lb. Bement-Miles, steam forging.
800-lb. Billings & S., board drop, 75%.
800-lb. Waterbury-F., board dr., 75%.
800-lb. Lane, steam forging.
1500 lb. Lane steam forging.
1500-lb. Waterbury-Farrell, board drop, 80%, (2).
2000-lb. Waterbury-Farrell, board drop, 80%, (2).
2500 lb. Bement-Miles, stm forging.
8000 lb. Chambersburg, stm. forging.
800-lb. to 4000 lb. Chambersburg and Massillon steam drop hammers.

### LATHES.

16" to 20" tool room, various lengths.
20"x10' Prentice, geared head, 85%.
25"x12' LeBlond heavy duty.
27"x22' Bridgeford, pl. turning, m.d.
30"x22' Bridgeford, pl. turning, m.d.
32"x18' Schumacher, cone head, 60%.
32"x32' Bridgford, comp. rest, m. d.
36"x44' Bridgeford, c. r., m. d.
48"x26' Bridgeford, grd. hd., t. a., 85%.
54"x34' Houston, Stanwood & Gamble, geared head, motor drive.
60x36 Houston Stanwood Gamble.

### MILLING MACHINES.

Style "B" Gooley & Edlund, 80%, (2).
No. 2 Cincinnati plain, 80%.
No. 3 Brown & Sharpe, plain, 65%.
No. 3B Brown & S., pl., heavy, 60%.
Becker miller, model "C," table 14"x54", motor drive, 85%.
66"x42"x16' Ingersoll, fixed rail, 4hds.

### PLANERS.

30"x30"x8' Gray, single head, 80%.
48"x48x16' Pond, 4 heads, heavy duty.
72"x72"x16' Betts, four heads, 90%.
60"x48"x16' Pond, 2 hds., old style, light pattern, 50%.

### PIPE MACHINES.

No. 9½ Merrill, capacity 2½" to 8".
2", 4" & 8" Jarecki, with dies and countershaft, late models, 85%.

### PRESSES.

No. 57 Toledo trimmer, with side shear, 80%.
Waterbury-Farrel trimmers, 60" flywheel, 80%, (2).
59½ Toledo, straight side, single crank, tie rod frame, 80%.
No. 56 Consolidated, 4" stroke, 80%.

**Cyril J. Bath & Co.—Continued**

PUNCHES AND SHEARS.

No. 2 Hilles & Jones horizontal punch 70%.
54" gap American ship punch, capacity 1" thru 1", 70%.
84" throat, Long & Allstatter capacity about ⅞" thru ⅞".
Kling Bros. horn press, 60" horn, flywheel 50" dia., 6¾" face.
48" throat No. 4 Southwark, capacity 2"x1½".
48" throat No. 5 Southwark, capacity 2"x1".
60" throat No. 5 Southwark, capacity 1½"x1½".
36" throat style G, Cleveland, capacity 1¼"x9" flat or 2¼" round bars.
No. 6 Quickwork rotary shear, capacity up to 1½" plate.
36" throat Lennox rotary shear, capacity about ½" plate.

SAWS.

48" Newton cold saw, motor drive. | Power hack saws, 6" to 9".

SHAPERS.

20" American, crank, belt, 80% | 24" Walcott, crank, back geared, 80%.

SLOTTERS.

48" Niles-Bement-Pond, motor dr. | 12" Sellers, 75%.
10" Newton, with countershaft, 75%.

TUMBLING BARRELS.

Several sets 18"x48" chill lined square, with roller bearings and exhaust.

TURRET LATHES AND SCREW MACHINES.

21" Gisholt standard model, 70%. | No. 3A Warner & Swasey.

MISCELLANEOUS.

Acetylene generator, Davis.
Blower, No. 4 Root, motor drive.
Blower, American, 9' fan, motor driven, 85%.
Blowers, Sturtevant, motor driven, 85%, (2).
Boring machine, for cylinders, portable, 4" bar, 7" feed, arranged for motor or engine drive, 75%.
Gear cutter, 36" Gould & Eberhardt, 60%.
Keyseater, No. 2 Davis.
Keyseater, No. 4 Mitts & Merrill.
Pyrometer, Brown.

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## FOR SALE BY

**Clinton Machinery Co., 128 S. Clinton Street, Chicago, Ill.**

MILLING MACHINES.

No. 2 Cincinnati universal.....$350.
No. 1½ Rockford plain, with d. h. and vise..... 450.
No. 1 B. & S. univ., complete.. 550.
No. 21 Garvin, geared.....$175.
Rockford hand miller..... 85.
P. & W. and Hardinge, bench type, each..... 125.

LATHES.

18"x8' Springfield, s.q.c.,d.b.g..$350.
15"x8' Carroll & Jamieson, s. q. c..... 225.
16"x6' Hamilton, l. c. g., comp. 175.
14"x6' Rockford.s.c.g., like new$300.
14"x6' Rockford, q. c. g., taper att.with draw-in att & collets. 375.
14"x6' Reed, taper att. l. c. g.... 175.

DRILLS AND PUNCH PRESSES.

10" new Champions, bench type, (15), each .....$ 30.
14" new Champions (10) each .. 85.
20" Superior, lever & h. feed.... 50.
21" Weigle ..... 250.
24" Superior, b. g., tapping att... 200.
24" Henry & Wright, b. b. h. s..$190.
No. 18 Bliss, o. b. i. ..... 110.
No. 2 R & K., o. b. i. ..... 175.
No. 3 Ferracute..... 150.
No. 3 Kohler, o. b. i ..... 225.
No. 4 Consolidated, o. b. i..... 425.

SHAPERS.

14" Smith & Mills crank (2).....$225.
15" Kelly crank..... 200.
17" Smith & Mills b. g. crank...$375.
20" American, b. g., univ. table... 650.

MISCELLANEOUS.

Folder, 42" Niagara .....$ 70.
Grinder, 8" Heald, ring & surf.. 75.
Hammer, No. 2 A H D hi speed 150.
Oil separator, No. 2 American, cap. 2540 cu. in.....$150.
Screw machine, 2" cap. w. f. and collets .....$250.
Spinner and riveter, Grant..... 100.
Spot welder, 20 k. w. Toledo.... 350.
Surface plate, 24"x36" B. & S.... 75.

## FOR SALE BY

**Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.**

### LATHES.

32"x19' New Haven, taper, older style.
26"x10' Niles, q. c. g.
24"-40"x12' Greaves-Klusman, gap.
24"x10' Lodge & Shipley, grd. bd.
20"x10' LeBlond heavy duty, q. c. g., taper attachment.
20"x 8' Monarch, q. c. g., dbl. g.
18"x 8' Morris, q. c. g., dbl. g., (2).
18"x 8' Walcott, q. c. g., d. b. g.
18"x 8' Sidney, q. c. g., d. b. g., (2).
18"x 8' Hamilton, q. c. g., d. b. g.
18"x 8' Bradford, q. c. g., d. b. g.
16"x 8' Monarch, q.c.g., sgl. pul. dr.
16"x10' & 16"x6' Pratt & Whitney, taper, draw. collets, relieving att.
16"x 8' Bradford, q. c. g., taper, draw collets, relieving attachment, (2).
16"x 8' Pratt & Whitney, q. c. g., taper, relieving attachment.
16"x 6' Walcott, q. c. g.
16"x 6' Pratt & W., q. c. g., taper.
15"x 6' Rockford, qk. ch. grd., taper, draw collet attachment.
15"x 5' South Bend.
13"x11' Sebastian.
12"x 5' Pratt-W., taper, draw collets.
Porter-Cable, (2).

### MILLERS.

24" Bullard.
No. 2 Kempsmith universal.
No. 1 Kempsmith plain.
No. 1 Brown & Sharpe plain.
No. 1 Rockford plain.
National Transit Co. plain.
No. 4 Cincinnati, single pulley.
No. 8 Defiance horizontal.
24" Bullard vert., rapid production.
24" Colburn vertical.
No. 3 Kempsmith, gr. box fd., plain.
Cincinnati duplex production.
No. 2 Hendey, gear box feed, plain.
Nos. 2, 4H, 5, 5A & 5C Becker, vert.
Gooley & Edlund, production.
Pratt & Whitney thread miller.
2½" Twin spline miller, P. & W.

### DRILL PRESSES.

24" Baker Bros. heavy duty, (3).
24", 26" Aurora, Cincinnati, etc.
No. 3 Fox multiple, 16-spindle, ½".
2, 3 spdl. 24" Aveys, 1" cap. (3).
4-spindle Allen, ⅝".
Sipp's, with comp. tilting table, (2).
1, 2, 3, 6 sp. Leland-Gifford, ⅝" cap.
Large variety 14", 16", 20" & 24".

### GRINDERS.

Bryant internal grinders and chucking machines, (6).
Nos. 2 & 3 Brown & Sharpe univ.
No. 13 Brown & Sharpe universal.
Nos. 1 and 2 Cincinnati universal.
Cincinnati universal, 4"x57" table.
No. 1 Norton universal.
No. 2 Norton univ., magn. chuck.
No. 2 LeBlond universal.
10"x36" Norton cylindrical.
O. C. Walker surface, magn. chuck.
4"x20" Norton cylindrical.
No. 11 Brown & Sharpe.
40" disc, Gardner, Besly.
No. 23 Brown & Sharpe cylinder.
No. 65 Heald cylinder.

### SCREW MACHINES AND TURRET LATHES.

Jones & Lamson dbl., sgl. spindle.
No. 2 Warner & Swasey pl. hand.
No. 2 Brown & Sharpe semi-auto.
No. 6 Foster, power long. & cross.
No. 4 Warner & Swasey universal.
No. 4 Warner & Swasey, screw mch.
No. 6 Warner & Swasey, turret lathe.
1" & 1½" cap. Acme, b. g., frict. h.
14" Gisholt, motor drive.
24" Gisholt, motor drive.
Nos. 0, 1, 2, 3 Foster, Bardons & Oliver, Garvin, W. S., P. & W.
⅝", ¾", 1½", 2" Cleveland auto.
3½" capacity Acme universal.
16" & 18" Fox lathes, b. g., fric. hd.
New Britain auto. chucking mch.

### PUNCH PRESSES AND SHEARS.

No. 6 Bliss, Stiles pattern.
No. 3 Black & Johnson (3).
No. 64 Consolidated double crank, 42" between housings, 4" stroke.
No. 4 American, solid back.
10' Niagara square shears, 20 ga.
⅜" capacity slitting shear.
No. 3 Overmeyer sprue cutter.

### GEAR CUTTERS.

No. 12 Barber-Colman.
No. 13 Brown & S., bevel & spur.
Nos. 1 & 1½ Standard auto., (8).
Waltham automatic, (4).
No. 10 Bilton gear hobbers, (4).

### MISCELLANEOUS.

Beaders, power.
Bolt cutter, ⅝" Geometric.
Bolt cutter, 1" Acme, dbl. spindle.
Bolt cutter, 1½" Landis.
Bolt cutter, 2-spindle 1½" Landis.
Bolt cutter, 1½" Acme, double head.
Bolt cutter, 3" National Acme.
Broach'g mchs, No. 3B Lapointe(2).
Corrugating machine, steel, 7"x36".
Keyseater, No. 1 Becker.
Keyseater, No. 2 Davis.
Reducing or straight, rolls, 6"x36".

**Chas. Molitor Machinery Co.—Continued**

MISCELLANEOUS—CONTINUED.

Reducing rollers, 11"x22" Toledo, weight 20,000 lbs.
Rivet spinners, Grant.
Screw presses, 24" and 30".
Shears, circle and slitting.
Shears, 60" splitting, (7).
Straightening rolls, 10"x36".
Tapping machines, all sizes.

Drill & lathe chucks, Stromberg periodograph, time clocks, time stamps, etc. 1000 different sizes emery wheels.

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## FOR SALE BY

**Tubor, Velick & Co., Inc., - - 628-630 W. Lake St., Chicago, Ill.**
**Telephones: Monroe 4199-6813. No Branches**

PUNCH PRESSES.

No. 4 American Can.
Bliss Nos. 19 and 19½.
Consolidated No. 1½.
No. 15 Torris Wold.
Perkins punch presses, ½" str. (20).
Nos. 13 & 15 single end punches.
Long & Allstatter horn punch, capacity 1½x1.

DRILL PRESSES.

14" Excelsior.
20" b. g., p. f., new, $130.
20" drill presses (40), each $40.
26" Weigel.
30" Reed-Prentice.
Demco high-speed drills.
Bench type drills.
3½' Hilbert radial.
3½' Canedy-Otto radial.

MILLING MACHINES.

No. 2 LeBlond.
No. 2 Cincinnati universal.
No. 3 Kempsmith.
A number of hand millers.

LATHES.

11"x 5' Seneca Falls.
13"x 5' South Bend.
16"x 6' Hamilton, q. c., (2).
16"x 6' Sidney, q. c., (2).
16"x 6' Monarch, q. c.
16"x 8' Canedy-Otto.
16"x 8' National, q. c.
17"x 9' Chard, q. c., (9).
18"x 6' Lehmann, q. c., (2).
20"x 8' Lodge & Shipley, geared head, a. p. drive.
24"x10' Canadian, q. c., d. b. g., (3).
22"x10' Cisco, q. c.
25"x10' Sidney.
26"x12' Prentice.

PLANERS.

24"x24"x 8' Putnam.
30"x30"x 8' Fitchburg.
30"x30"x12' Niles-B.-P., 2 heads.
36"x36"x 7' Flather, 2 heads.

SCREW MACHINES.

No. 2 Smith, hand.
Pratt & Whitney, hand, (3).
Nos. 1, 2, 3 and 4 Foster screw mchs.

GRINDERS.

Bath universal, with magnetic chk.
No. 2 Manhattan surface.
Gardner No. 6 disc grinder.
No. 14 Besly, disc.
Emery grinders, $2 and up.

WOOD-WORKING MACHINERY.

Band saws, 36" Famous, new, (10).
Boring mills, Andrew, (3).
Saw table and jointer combined, portable.
Glue jointer, Falls.
Shapers, double spindle, Whitney and Fay.
Swing saws, Porter, (4).

MISCELLANEOUS.

Buffers, U. S. and Westinghouse, 5 h. p., b. b.
Hack saws.
Lockers, steel.
Motors, a. c. and d. c.
Paper cutter, 57" Oswego, & 5 h. p., fully automatic.
Pressed steel bench legs, (1,000).
Pressed steel hangers and bearings, all sizes.
Pressed steel stools, with backs.
Punch press, No. 3 Thomas.
Punch press, No. 3 Robinson.
Saw mandrels, $3.
Shaper, 16" Kelly, b. g.
Shaper, 24" Kelly, b. g.
Thread hobber, Pratt & Whitney.
Time clocks, International.
Trucks—1,000 factory trucks.
Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

## FOR SALE BY

**Marr-Galbreath Machinery Co., 58 Water St., Pittsburgh, Pa.**

Angle & bar bender, No. 9 Buffalo.
Band saw, 36" Oliver, m. d.
Bender & straightener, No. 4 H. & J.
Blowers, No. 3 Stur., pressure.
Blowers, pos. pres., 2, 2½ & 5" outlet.
Bolt cutter, single, 1½" Foote-Burt, Landis head.
Bolt cutter, 1½", Acme, triple head.
Boring mills, Rockford, 2" & 3" bar.
Boring mill, 36" Bullard, side head.
Boring mill, vertical, 72" Betts.
Boring mills, 51" Niles; 10'-16' Niles.
Boring mill, vertical 84", 2 heads.
Boring mills, 51 & 62", 2 hds., m. d.
Boring mill, 42" D. & H., 2 heads.
Boring mill, 12' Pond, 2 heads.
Brake or press, 10' Robinson, toggle.
Bulldozer, No. 8 Ajax, new
Compressor, 8"x8" Ingersoll-Rand, 177 cu. ft., belt.
Compressor, 1500. cu. feet Ingersoll-Rand, steam.
Comp'r, 2500 cu.ft. L. D.G., a. c. mtr.
Compressor, steam, 864 cu ft., Bury.
Compressor, 1300, 888, 599 cu.ft., m.d.
Drill, radial, 6' Baush. m. d.
Drill, radial, 5' Prentice, t. a., m. d.
Drill, rad'l, 4' Western h d., g. b., m d.
Drill, radial, 4' American, gear box.
Drill, radial, 4' Dreses, plain.
Drills, 36" Hoefer; 24" Aurora, s. h.
Drill, 13" Washburn sensitive.
Drill, 28" Barnes, sliding hd., b. g.
Drill, 22" Aurora upright.
Exhausters, No. 8 Buffalo.
Filing machine, Rearwin die filer, table 16½"x17½".
Forging mch., 1½" Acme, steel bed.
Forging machines, 1½, 2, 2½ & 3".
Gear cutter, No. 11 universal Dwight
Gear cutter, No. 3 S. & C., auto. 1x1".
Generator, 100 k.w., 240 v., d. c., connected to horiz. steam engine.
Generator, 85 k. w., 240 v., d. c., connected to horiz. steam engine.
Grinder, No. 60 Heald internal.
Grinder, Diamond dbl. end, 14" wh.
Grinders, pl. cyl., No. 8 & 12 Modern
Grinders, No. 1 Cincinnati, universal cutter & tool.
Grinder, disc, No. 10 Besly, 18" wh.
Grinder, Yankee drill, style A.
Hack saw, 6x6 Peerless.
Hack saw, No. 5 Marvel, cap. 6x6".
Hack saw, No. 7-KC Atkins, 8x8.
Hammer, 100 lb., 600 lb. sgl. fr., steam
Hammers, sgl. fr., 350, 800, 1100, 1500.
Hammers, st. drop, 2000 lb. Bement.
Hammers, st. drop, 3000 lb. Ch'b'g.
Hammers, 40, 80, 100 lbs. Bradley.
Hammer, 125 lb. Bradley upr. strap.
Ice machine, 1-ton, with motor.
Keyseater, No. 1 Davis, cap. 1" key.
Lathe, 42"x32' Am., grd. hd., m. d.
Lathe, 32"x14', Draper, 2½" h. s.
Lathe, 18"x10' Porter, s. b. g., c. r.
Lathe, 18"x8' Hamilton, q. c. g.
Lathe, 16"x8' Bradford, pl. change.
Lathe, 16"x6' Flather, taper att., ch.
Lathe, 15"x6' South Bend.
Lathe, 14"x6' Monarch, q. c. g., t. a.
Lathe, 13"x6' Star, q. c. g., chuck.
Lathe, 12"x8' Reed-P. g. h., s. p. d
Lathe, speed, 11"x4' Prentiss, t-rest.
Miller, bench, No. 1 Burke, hand.
Miller, No. 3½ Fox, hand. 24"x6"x14½".
Miller, No. 0½ Cin. pl., 18"x6"x15".
Miller, No. 3 LeBlond, pl. ind. hd.
Miller, No. 2 Kempsmith universal.
Miller, vertical, No. C4 Becker.
Miller, Hendey Lincoln No. 2½.
Miller, Knight duplex, tbl. 8½"x32".
Miller, No. 0 Kempsmith universal.
Miller, No. 3 Cinc'i, plain 32"x9x20.
Miller, vertical No. 0 & 1 Bickett.
Millers, hand, Whitney, (2).
Motor, 5, 3, 2 h. p., 1 phase, 60 cycle.
Oil separator, No. 2 Roper, belt.
Pipe machine, Oster 4", belted.
Pipe machines, 12", 6" & 2" Jarecki.
Planer, 120"x120"x36', 4 heads, m. d.
Planer, 74"x54"x24' Pond, 4 hds. m. d.
Planer, o. s., 72"x72"x18', 3 hds., m. d.
Planer, 60x60"x12' Pond, 3 hds., m. d
Planer, openside 42"x42"x16', 3 hds
Planer, Powell, 42"x42"x16', 4 hds.
Planer, 42"x42"x12' Betts, 1 head.
Planer, 42"x36"x20' Cin'ti, 4 heads.
Planer, 26"x26"x8' Niles, 1 head.
Planer, 24"x24"x 5' New H., 1 hd.
Press, No. 10 Bliss o. b. i., bench.
Press, No. 11 Perkins, pl. trim., 4" str.
Press, No. 82 Consolidated horning.
Press, No. 16 horning, swing table.
Presses, No. 21 Bliss; 1 Toledo, o. b. i.
Punch, No. 124-A Niagara, 15"t., ½"x½".
Punch & shear, hand, Schatz, ⅜x⅜".
Punch & s., No. 2 L. & A., 30" tht., a. j.
Punch & shear, 14" & 72" tht., equal No. 12 W. W.
Pyrometer, 32 to 3000 deg. F.
Riveter, ½" Shuster, style A.
Riveter, 80-A Grant, cap ½".
Riveter, Allen, jaw, 36x20x1½" rivets.
Riveter, 20x18x1" rivets pinch bug.
Rivet hammers, 4-A, 5-A, high spd.
Rolls, bending, 40'x1", m. d.
Saw, cold, No. 18 Wagner, 16" saw.
Saw, cold, No. 11½ Higley, 14" saw.
Shaper, 24" Stockb'dge. b g. c., mod'n.
Shaper, 24" Gould & Eberhardt.
Shaper, 14" Steptoe, crank.
Shear, single end, 9" throat, cap. 3½" round, motor drive, new.
Shears, Quickwork No. 6, m. d.
Shear, rotary, ½" Lennox, 8' gap.
Straightener, No. 2 Kane & Roach.
Testing mchs., 100,000, 200,000 lbs.
Tumbling barrel, Globe, 18"x15".
Turret lathes, Nos. 1 & 2 W. & S.

**Marr-Galbreath Machinery Co.—Continued.**

Turret lathe, No. 4 Wood Tilted.
Turret lathe, No. 1 Bardons & O.
Turret lathe, Libby 21", motor drive.
Valve mche.,28"Pottstown,3-w.,m.d.
Valve tapper,4"Pottstown,3-w.,m.d.
Valve tapper, 4" Pottstown, 3-spdl.

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## FOR SALE BY

**Brownell Machinery Co., - 150 Pine St., Providence, R. I.**

### BORING MILLS.

24" Bullard rapid production.
30" Baush vertical.
No. 10 Beaman & Smith horiz. 3½".
No. 1½ Beaman & Smith horizontal drilling, tapping, boring and milling machine, 3½".

### DRILLING MACHINES.

5-spdl. Henry & Wright, class "K".
3-spindle Cincinnati, b. b.
No. 1 Langelier, h. s., b. b.
No. 2 Langelier, h. s., b. b.

### GRINDERS.

No. 1 Norton tool & cutter.
No. 2 Norton tool & cutter.
No. 2 Brown & S. tool & cutter.
Taylor & Fenn wet tool.
Mummert-Dixon oil stone.
No. 12 B. & S. plain 8x36.
No. 1 B. & S. universal 10x24.
Reeves centerless.
Sanford centerless.

### METAL CUTTING MACHINES.

No. 7-K Atkins 8x8 hack saw.
13"x16" Peerless hack saw.
No. 1 Burr cold saw.
No. 2 Burr cold saw.
No. 2-B Cochrane-Bly cold saw.

### LATHES.

9"x 4' Hendey.
10"x40" Johnson.
12"x 5' Reed plain turning.
15"x 6' Flather.
16"x 8' Sidney.
20"x 8' Roulsted.
24"x16' F. E. Reed, taper.

### MILLING MACHINES.

No. 13 Garvin b. g. plain.
No. 4 Cincinnati plain.
Beaman & Smith No. 2 combined vertical and horizontal spindle.
No. 1 Kempsmith universal.
Type "A" Briggs manufacturing.
Whitney hand miller.

### PLANERS AND SHAPERS.

48"x72"x20' Gray, 4 heads.
38"x38"x14' Gray, 4 heads.
36"x36"x12' Gray, 2 heads.
30"x30"x 8' Bement-Miles, 2 heads.
26"x30"x14' Whitcomb-B., 2 heads.
24"x34"x 6' Powell, one head.
17"x17"x 4' Whitcomb-B., one hd.
15" Hendey friction shaper.
16" Ohio plain shaper.
24" Potter & Johnston shaper.

### PRESSES.

No. 24 Atlas arbor press.
No. 3-A Standard, power press.
No. 1 Standard broach'g & draw'g, 7".
McWilliams d. a. power, roll feed.
No. 54 Niagara geared, 4".
100 lb Standard. plain drop.
Bosworth foot presses.
No. 2A Adams screw press.

### TURRET MACHINERY.

2x24 Jones & Lamson flat turret.
3x36 Jones & Lamson flat turret.
1½x18 Pratt & Whitney, b. g., p. f.
No. 2-P P. & J. piston & piston ring.
¾" Gridley 4-spindle automatics.

### MISCELLANEOUS.

Broaching machine, No. 2 Lapointe (Hudson).
Filing machine, Thurston.
Gear cutter, No. 3 B. & S. 26x8.
Gear cutter, No. 13 B. & S. 18x4.
Marking machine. Martin, hand.
Rolling mill, 3x5 Willetts.
Shear, McWilliams power rotary.
Slotter, 12" Bement-Miles.
Swaging mch., Excelsior Needle Co.
Tapping mch., No. 2 Garvin vert.

### WOOD-WORKING MACHINERY.

Band saw, 27" Silver.
Band saw, 36" Crescent.
Jig saw, No. 1 Beach.
Jointer, 16" Sidney.
Lathe, 20x8 Fay & Scott.
Saw table, No. 650 Dover.
Saw table, No. 2 Crescent, boring & hollow chisel mortising attach.
Saw table. Rollston double arbor.
Trimmer, No. 1 American univ.

## FOR SALE BY

**McCoy-Brandt Machinery Co., 210-14 Penn Ave., Pittsburgh, Pa.**

Air compressor, 10"x10", with motor, 3-60-220 volts.
Air compressor, 212 cu. ft., Chicago portable, oil driven.
Boring mchc., 5" bar, Barrett horiz.
Boring mill, 48" Colburn, 2 heads.
Boring mill, 6" bar, Niles horiz.
Boring mill, 10' Niles, 2 heads.
Bulldozers, Nos. 5 & 30 W.-W.
Bulldozer, No. 8 Ajax, 36" str., m. d.
Drills, radial, 5' Prentice, s. p. d.
Drill, radial, 6' Prentice, belt drive.
Forging machines, 2" and 3".
Grinder, 16"x68" Landis crankshaft.
Grinders, 12"x48" Cincinnati plain.
Grinder, Gisholt universal tool.
Grinder, 36" Diamond wet tool.
Grinder, 10x32" Ott universal.
Grinder, No. 4 Gardner double disc.
Lathe, No. 5 Rivett precision with turret, etc.
Lathe, 16"x10' L. & S., cone, taper.
Lathe, 19"x14' LeBlond, grd. hd.
Lathe, 24"x26' American, q.c.g., m.d.
Lathe, 27"x18' L. & S., m. d., t. a.
Lathe, 30"x18' L. & S., m. d., t. a.
Lathe, 36"x20' Sidney, q. c g , cone.
Lathe, 48"x26' Bridgeford, m. d.
Millers, horiz., Nos. 3 & 5 Cincinnati.
Miller, vertical, No. 0 Bickett.
Millers, Nos. 2, 5C & 6 Becker vert.
Millers, vertical, No. 3 Brown & Sharpe, motor drive.
Miller and driller, No. 1 Knight.
Motor, ½ h. p. Wagner, 1-60-110, 1750 r. p. m.
Pipe machines, 12", 10", 8", 4" & 2".
Planer, 30"x30"x8' N. B. P., 1 head.
Planer, 36x36x12' Powell, 3 heads, like new.
Planer, 30"x30"x8' Flather, 1 head.
Punch, 36" Cleveland 1½"x1", m. d., arch. jaw.
Punch, 24" Cleveland ⅞"x1", m. d., arch. jaw.
Rolls, bending, 16'x¾" Wickes, m. d.
Shears, guil., cap. 2½" and 2" and 1".
Shear, rotary bevel, cap. ⅜", m. d.
Slotter, 12" Newton, crank, cheap.
Turret lathe, 18" Libby, like new.
Turret screw machines, No. 4 Warner & Swasey.

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## FOR SALE BY

**Jones Machine Tool Co., 528-532 E. Front St., Cincinnati, O.**

### LATHES.

| | | | |
|---|---|---|---|
| 16"x 6' LeBlond, q. c. g. | $ 375. | 20"x10' Lodge & Shipley, q.c.g. | $ 850. |
| 18"x 8' Hendey, q. c. g. & t. a. | 975. | 30"x12' Houston Stam., q. c. g. | 750. |
| 18"x 8' American, q. c. g. | 725. | 24"x20' Lodge & Shipley, q.c.g. | 1250. |

### MILLING MACHINES.

| | | | |
|---|---|---|---|
| No. 1½ Valley City universal | $ 500. | No. 3 Cincinnati plain | $ 950. |
| No. 1½ Cincinnati universal | 675. | No. 3 LeBlond plain | 900. |
| No. 2 Hendey universal | 775. | No. 3 B. & S. vert., s. p. drive | 1250. |

### RADIALS AND DRILL PRESSES

| | | | |
|---|---|---|---|
| 30" American, s. p. drive | $ 675. | 72" Dreses, motor drive | $1500. |
| 42" American triple purpose | 1750. | 24" Hoefer, sta. head | 175. |
| 42" Gang, cone drive | 375. | 24" Rockford, sliding head | 225. |
| 48" Bickford, cone drive | 475. | 30" Cincinnati, sliding hd., t. a. | 325. |
| 72" Niles, cone drive | 750. | 42" Bickford, stationary head | 225. |

### PUNCH PRESSES AND SHEARS.

| | | | |
|---|---|---|---|
| No. 2 Niagara | $ 140. | No. 4-Verdin, b. g. | $ 675. |
| No. 5 Niagara, b. g. | 475. | No. 85 Bliss, d b. g. | 1500. |
| No. 2 Swain horn press | 275. | No. 34 Toledo plain | 550. |
| No. 6 Whiting, single end | 475. | No. 516A Toledo sq. sh., 16 ga. | 275. |

### PLANERS AND SHAPERS.

| | | | |
|---|---|---|---|
| 24"x 6' Powell 1 head | $ 600. | 16" Smith & Mills shaper | $ 325. |
| 30"x 6' Gray, 2 heads | 850. | 21" Smith & Mills | 575. |
| 30"x12' Gray, 1 head | 975. | 21" American b. g shaper | 775. |
| 42"x26' Cincinnati, 2 heads | 2250. | 24" Kelly b. g. shaper | 825. |

### MISCELLANEOUS.

| | | | |
|---|---|---|---|
| Chain hoists, various sizes, (50) | | Hammer, steam, 800 lb. Niles | $ 800. |
| Gear cutter, 26" Cinti No. 3 | $ 350. | Hammer, 100 lb. Bradley | 275. |
| Gear cutter, 48" B & S. No. 4 | 750. | Mill, 36" Bullard vertical | 1500. |
| Gear hobber, 24" S. & S | 550. | Mill, Lucas No. 21 horiz. 2½" bar | 1500. |
| Gear hobber, Barber-C. No. 12 | 1075. | Shaper, 36" Fellows No. 6 | 200. |
| Grinder, 10x50 Norton | 475. | Slotter, 18" Niles vertical | 1500. |

Write for our latest Stock List.

## SECOND-HAND MACHINERY

## FOR SALE BY

**Niles-Bement-Pond Company, - 111 Broadway, New York**
**Located at our various factories**

NOTE—All Motor-Driven Machines are for 220 volts, direct current.

### PLANERS.

24"x24"x 6' Powell, 1 head.
24"x24"x 6' Whitcomb, 1 head.
24"x24"x 8' Whitcomb, 1 head.
24"x24"x10' Whitcomb, 1 head.
26"x26"x 6' Gray, 1 head.
30"x30"x 6' Pond, 2 heads.
30"x30"x 8' Pond, 2 hds., rev. motor.
30"x30"x12' Pond, 2 hds., rev. motor.
32"x32"x10' Niles, 2 heads.
38"x36"x10' Niles, 4 heads.
36"x36"x12' Pond, 4 heads, rev. mtr.
36"x36"x16' Pond, 4 heads, rev mtr.
38"x38"x10' Niles, 2 heads.
42"x42"x12' Niles, 4 heads.
42"x42"x14' Pond, 3 heads.
42"x12"x28' Pond, 4 heads, rev. mtr.
48"x48"x16' Pond, 4 heads, rev. mtr.
50"x36"x22' Pond, 4 heads, rev. mtr.
52"x36"x10' Pond, 4 heads, rev. mtr.
54"x54"x22' Pond, 4 heads, rev. mtr.
60"x60"x20' Niles, 3 heads.
60"x60"x24' Niles, 4 heads.
120"x120"x36' Betts, 4 heads, motor drive thru belts.

### DRILLING MACHINES.

3½' Morris radial.
5' Niles radial, motor driven.
6' Pond radial, motor driven.
6' Niles univ. radial, motor driven.
6' Niles semi-univ. radial, mtr. driv.
8' Pond radial, motor driven.

### LATHES

16"x 8' and 18"x8' Morris.
18"x10' Morris.
21"x 8' LeBlond, motor drive.
22"x10' & 22"x12' Morris
25"x10' LeBlond, motor drive.
26"x10' Pond, motor drive.
26"x36' Pond, qk. ch., dbl. bk. grd.
30"x14' Pond, quick change.
30"x25' Niles lathe.
30"x23' Pond, qk. ch., motor drive.
36"x12' Pond, triple grd., motor dr.
36"x17' Pond, triple grd., motor dr.
42" Pond forge lathe, motor driven.
60"x36' Niles, cone head.
72"x21' Pond, motor drive.
8"x48" Pratt & W. turret lathe.
1"x15" Pratt & W. turret lathe.
2½"x26" Pratt & W. turret lathe.
3"x36" Pratt & W. turret lathe.
28" Pond rigid turret lathe.

### SHAPERS AND SLOTTERS.

16" Stockbridge shaper.
26" Worcester crank shaper.
15" Bement slotter, motor driven.
18" Bement slotter, motor driven.

### MILLING MACHINES.

No. 10 Pratt & W. hand miller.
No. 3 Brown & Sharpe plain, motor driven.
No. 3 Cincinnati universal.
No. 5 Brown & Sharpe plain.
48"x48"x14' Bement slab miller, motor driven.
Size C Becker vertical.
No. 3 Cincinnati vertical miller.
No. 5 Brown & Sharpe vertical.
No. 13 Pratt & W. Lincoln miller.
6"x48" Pratt & W. thread miller.
6"x80" Pratt & W. thread miller.
6"x132" Pratt & W. thread miller.

### GEAR CUTTERS.

No. 3 Newark gear cutter
No. 3 Brown & Sharpe spur.
No. 4 Brown & Sharpe spur.
No 4 Newark spur.
5-A Lees-Bradner gear hobbing machine.

### VERTICAL BORING MACHINES.

18" Niles side hd. mill, motor dr.
10' Niles boring & turn'g mill, m. d.

### HORIZONTAL BORING MACHINES.

40" Morris, horizontal boring and drilling machine, 2" bar.
66" Bement horizontal boring and drilling machine, 4½" bar.
60" Bement horizontal boring and drilling machine, 5½" bar, motor driven.
60" Bement duplex control boring machine, 4" bar, motor driven.
Pond floor drill, 3" bar.
Niles boring, drilling and milling machine, 5" bar, motor driven.

### MISCELLANEOUS.

Centering machine, 4" P. & W.
Grinder, 4"x30" P. & W.
Pipe machine, 2" Cox, motor driven.
Punch, No. 3 L. & A. horiz., ⅜" in ⅝".
Punch, No. 2 L. & A. 48" thr., 1" in 1".
No. D L. & A. dble. 36" thr., 3" in 1½".

### CRANES AND HOISTS.

Electric Traveling Cranes. 220 Volts, Direct Current.
3-ton crane 20' 2½" span.

### MOTORS.

We have a large stock of new motors from 1 h. p. to 50 h. p., which are of the variable speed type. 220 volts, d. c., which we offer at attractive prices.

## FOR SALE BY

**Mid-West Machine Tool & Supply Co., - Davenport, Iowa**

With a good-as-new, money-back guarantee—Partial list.

Automatic, 1¼" Cleveland, model A.
Automatic, 2¾"-3½" Cleve., model A.
Boring mill, 24" Bullard.
Boring mill, 36" Gisholt.
Drill, No. 22 Natco.
Drill, No. 17 Foote-Burt 4-spindle.
Grinders, No. 10 B. & S. pl., s. p. d.
Grinder, 10"x36" Norton plain.
Grinder, No. 70 Heald internal.
Grinder, No. 220 Heald rotary surf.
Millers, No. 2 Hendey plain.
Miller, No. 3 Cincinnati plain.
Miller, 28" Cincinnati duplex.
Miller, No. 2-Y Brown & Sharpe.
Punch, s.c., F24 Badger, 1½" thru 1".
Thread miller, new Taft Pierce.
Turret lathe, No. 6 Warney & S.
Turret lathe, 124" Gisholt horiz.

## FOR SALE BY

**Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.**

Angle shear, No. 2 Cleveland, 4x4x½" angle.
Bolt cutter, 1½" Acme.
Grinder, Greenerd, tool & cutter.
Grinder stand, Western No. 4, two 14" wheels.
Lathe, 18"x8' Lodge & Shipley.
Miller, No. 00 Brown & S., hand.
Miller, No. 00 Owen, Fox type.

SQUARING SHEARS.

Geo. A. Ohl, 8', 3/16" capacity, power.
Planer, 36" x 36" x 10' Whitcomb, 2 heads.
Press, No. 1 Consolidated.
Riveter, Hanna, 24" throat, 15" gap, ¾" rivet.
Rivet hammers, No. 2-A, No. 4-A.
Shapers, 16" G. & E., (2).
Shaper, 16" Garvin.
No. 210-A Pexto, power.

## FOR SALE BY

**Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.**

Guaranteed New Machines in original crates at prices below list:

Crucible, FD-104 Hoskins.
Drills, 21" Canedy-Otto (2).
Drills, 20" Buffalo (4).
Drills, 36" Aurora sliding head (4).
Drills, No. 11 Pratt & Whitney multiple, 16 spindles.
Drills, No. 11 Pratt & Whitney multiple, 8 spindles.
Grinders, No. 60 Heald (2).
Grinders, Diamond wet tool.
Grinder, Churchill internal.
Lathe, 14"x6' Hamilton.
Lathe, 10"x5' Monarch.
Lathe, 14"x6' Monarch.
Lathe, 14"x8' Monarch.
Lathe, 16"x6' Monarch.
Pipe machine, No. 70 Forbes.
Screw mchs., No. 4 W. & S., g.f.h., (3).
Slotter, No. 3 Rhodes.
Straightener, No. 2½ Corey.
Tilted turret, No. 4 Wood.

Exceptional values in Used Tools:

Cylinder borers, 6-spindle Moline adjustable No. 5, 36".
Drill press, 25" W. F. & John Barnes.
Drill press, 4-spindle Reed sensitive.
Drill press, 3-spindle Reed sensitive.
Drill press, 2-spindle Reed sensitive.
Lathe, 14"x 6' American.
Lathe, 14"x 6' Monarch.
Lathe, 16"x 6' Hendey, rebuilt.
Lathe, 16"x 8' American, geared head, rebuilt.
Lathe, 16"x 8' Monarch.
Lathe, 16"x10' American.
Lathe, 28"x12' Draper.
Miller, No. 5 Becker vertical.
Miller, No. 2 Brown & S., rebuilt.
Miller, No. 4 LeBlond, rebuilt.
Millers, No. 3H LeBlond plain (2).
Millers, No. 4 LeBlond plain (2).
Planer, 30"x30"x16' L. W. Pond.
Planer, 36"x36"x14' Woodward.
Planer, 60"x60"x22' Niles.
Press, No. 69N Bliss.
Radial, 5' Pond.
Radial, 4' Cin'ti-Bickford, GB-BD.
Thread miller, 10" Lees-Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster (2).
Turret lathe, No. 2 Warner & S., hollow hex.
Turret lathe, 2½x26 Pratt & Whitney.
Turret lathe, No. 2½ s. g. Garvin.
Turret lathes, 3x36 Jones & L. (3).
Turret lathe, 2x24 Jones & Lamson.
Turret lathe, 21" Gisholt.
Turret lathe, No. 3 Cincinnati-Acme.

## FOR SALE BY

**Reliance Machinery Sales Company**

**Brighton Road at Pennsylvania Ave., - - Pittsburgh, Pa.**

Bolt cutter, 1½" Landis, double hd.
Bolt cutter, 2" National, single hd.
Bolt cutter, 3" Landis, single head.
Boring mill, 24" Bullard, rapid prod.
Boring mill, 30" Bullard, 1 head.
Boring mill, 34" Colburn, 1 head.
Boring mill, 42" Bullard, 2 heads.
Boring mill, 54" Bullard Maxi., m.d.
Boring mill, 72" Betts, 2 heads.
Brake, 60" D. & K., 14 gauge.
Broach, Nos. 3 & 4 LaPointe (Hudson)
Buffer, 2 h.p. U. S. Elec., 220-3-60
Bulldozer, No. 5 Williams & White.
Chamfering machine, Warner & S.
Compressor, Chicago 145', m. d.
Die slotter, 3½" stroke, Garvin.
Drill, 14" Leland-G. 6-spdl., m. d.
Drill, 13" Fosdick super speed, six spindle, m. d.
Drill, 16" Fosdick high speed, six spindle, m. d.
Drill, No. 4 Foote-Burt 4 spindle.
Drill, Reed, 4-spindle, cap. ½".
Drill, Baush, 8-spindle, No. 3 taper.
Drill, No. 30 Natco, 12-sp., No. 3 tap'r.
Drill, No. 13 Natco, 16-sp., No. 3 tap'r.
Drill, 20" Barnes, camel back.
Drill, 21" Cincinnati, sliding head.
Drill, 24" Hoeter, sliding head.
Drill, 36" Snyder, sliding head.
Drill, No. 310 Baker heavy duty.
Drills, 20" & 24" Foote-Burt, h. d.
Drill, No. 2 Turner Turret.
Gear cutter, 36"x10" G. & E., s. p. d.
Grinder, type RA U. S. Electric.
Grinder, type KKA U. S. Electric.
Grinder, 20" Besly disc, m.d. 220-3-60.
Grinder, Oliver drill, m. d., cap. ½".
Grinder, No. 70 Heald internal.
Grinder, No. 5 Bridgeport wet tool.
Grinder, No. 3 Brown & S. univ.
Hack saw, 6"x6" Peerless, belt dr.
Hammer, High Speed, cap. 1/16".
Hammer, 80 lb. Bradley cush helve.
Hammer, No. 4 Beaudry, mtr. dr.
Lathe, 12"x 6' Seneca Falls.
Lathe, 12"x10' Davis tool r'm. q.c.g.
Lathe, 14"x 6' Seneca Falls, q. c. g.
Lathe, 14"x 6' Hendey, tie bar.
Lathe, 14"x 6' Prentice, geared hd.
Lathe, 14"x 8' Whitcomb-Blaisdell.
Lathe, 17"x8' Sidney, hvy. duty, q.c.g.
Lathe, 18"x8' Lodge & Shipley, q.c. g., m. d.
Lathe, 18"x8' Rahn & Larmon, q.c.g.
Lathe, 18x10' Reed, q. c. g., d. b. g.
Lathe, 22"-10'6" Putnam, hvy. duty.
Lathe, 26"x12' Bridgeford hvy. duty.
Lathe, 27"x26' Schumacher-B., q.c.g.
Lathe, 30"x12' Johnson, triple grd.
Lathe, 30"x16' New Haven, q. c. g.
Lathe, 33"x12' Pond, triple geared.
Lathe, 34"x12' LeBlond, triple grd.
Lathe, 38"x50' New Haven, dbl. hd.
Lathe, 42"x31' Pond, triple geared.
Miller, No. 1 U. S., complete.
Miller, No. 2 Cincinnati h. p. vert.
Miller, No. 2 Cincinnati plain, v. a.
Miller, No. 3 Hendey plain.
Miller, No. 29 Osterlein universal.
Miller, No. 42 Oesterlein universal.
Miller, model B Becker, vert., s p d.
Miller, model C Becker vertical.
Millers, Sellers, Lincoln type, (2).
Millers, No. 25 Becker plain, (3).
Pipe machine, ½" to 2" Armstrong.
Pipe machine, Bignall & Keeler, ½" to 2", m. d.
Pipe machine, Merrill, 1½" to 6".
Pipe machine, 8" Cox, cap. 2½" to 8".
Pipe machine, Merrill, 2½" to 12".
Pipe machine, 12" Cox, cap 6" to 12".
Pipe machine, 18" Cox, cap. 8" to 16".
Planer, 24"x24"x 6' Gray, 1 hd
Planer, 36"x36"x8' Cincinnati, 1 hd.
Planer, 36"x36"x8' Clevel'd opens'de
Planer, 36"x36"x10' Pond, rev. m. d.
Planer, 60"x60"x16' Betts, 3 heads.
Planer, 72"x72"x18' Detrick & Harvey open side, m. d.
Press, No. 10 Bliss, reducing, 4" str.
Press, No. 23 Stoll, horning.
Presses, Nos. 61 & 62 Bliss, o.b., f.w.
Press, No. 87 Niagara screw press.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 65 Consolidated, 5" str.
Press, No. 168 Toledo toggle.
Press, No. 305 Bliss straight sided.
Press, No. 5-A Bliss, toggle.
Press, No. 13-A Bliss, toggle.
Punch, Reade s. e., ½"x¾", arch. jaw.
Punch, Wickes, 48" thrt, cap 1½"x1".
Radial drill, 2'6" Carlton high spd.
Radial drills, 4' & 5' Prentice plain.
Reduction gear, Foote, 50 to 1.
Sand blast, Pangborn type EA.
Saw, Williamson metal band.
Saws, American metal sw., m. d., (2).
Screw machine, No. 1 Warner & S.
Screw machine, No. 2 Warner & Swasey, plain head.
Screw machines, No. 4 Warner & Swasey, g. f. h., power feed, (3).
Shaper, 20" Cincinnati b. g. crank.
Shaper, 24" Cincinnati b. g. crank.
Shear, No. 2 Quickwork rotary.
Shear, 72" Niagara, 14 gauge.
Shear, 72" Wais & Roos, 12" gap.
Shear, squaring, 96" power, 20 ga.
Tapping mch., 2" Baker, type F-4.
Tapping mch., 8" Baker, type K-11.
Tooth rounder, 12" Rochester.
Turret lathes, 24" Gisholt, 4¾" hole.
Upsetter, 4" Acme, steel bed.

Our warehouse is full of bargains. What have you for sale?

## SECOND-HAND MACHINERY

### FOR SALE BY

**B. L. Saltzman, - 524-526 W. Van Buren St., Chicago, Ill.**

LATHES.

15"x6' Shepard. new, single pulley.
18"x10' American.
28"x12' Walcott.
12"x5' Vernon, with taper att.
Pratt & Whitney turret lathe, 1".
No. 22 Garvin screw machine.
No. 1, No. 2, No. 3 and No. 4 Wood turret lathes.

MISCELLANEOUS.

Band saw, 32".
Beading & wiring machines, Yoder.
Bolt threader, Wells, double head.
Drill presses, 1, 2 & 3 spdl. Allen 14".
Drill press, 21" Champion, b. g. new.
Drill press, 20" plain.
Factory transmission.
Gap shear, No. 536 Niagara.
Grinder, Heald, magnetic chuck.
Grinder, 26" Besly disc, with press.
Hack saw, power, 6x8 Racine.
Punch & s., No. 136 Niagara, ⅜' cap.
Screw press, Newel, 7" throw.
Slitting shears, circular; rollers.
During January ½ h. p. new 1 ph. A. C. Motors, 110 volt induction type...$ 30.

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### FOR SALE BY

**Hill, Clarke & Co., Inc., - 156 Oliver St., Boston 9, Mass.**

Machinery Bargains

BORING MACHINES.

Lucas horizontal, 3" bar, single pulley drive.

BALL BEARING SENSITIVE DRILLS.

Leland 2 and 4 spindles.
Allen 2, 3 and 5 spindles.

UPRIGHT DRILLS.

Aurora 24".
Barnes 20", 22" and 25".
Hoefer 24".
Prentice 25", 29" and 32".
Snyder 20" and 25".

RIVETERS.

Harvey Hubbell, ½" and 3/16" capacity.

GEAR CUTTERS AND HOBBERS.

Barber-Colman No. 2 hobber.
Becker-Brainard 18", 24" & 36" auto gear cutters, for spur, bevel and worms.

LATHES.

13" to 30" including F. E. Reed, LeBlond, Greaves-Klusman, Robbins, Flather, Seneca Falls, etc.

PLAIN MILLING MACHINES.

No. 1B Milwaukee, dbl. overarm, single pulley drive.
No. 3B Milwaukee, sgl. overarm, sgl. pulley dr., vertical attach.
No. 1½ Brown & Sharpe, cone dr.
No. 2 Cincinnati, cone drive.
No. 3 Cincinnati, cone drive.
No. 3 Cincinnati, motor driven, high power type.

UNIVERSAL MILLING MACHINES.

No. 1 Kempsmith, cone drive.
No. 2 Becker-Brainard, cone drive.
No. 1 Garvin, cone drive.

VERTICAL MILLING MACHINES.

No. 3 Cincinnati, high power type, single pulley drive.
No. 5B Becker-Brainard.

PLAIN GRINDERS.

Morse No. 1, 4"x20".
Modern, No. 12, 5"x30".
Norton 6"x32".

CUTTER GRINDERS.

Greenfield No. 1.
Norton No. 2, with power feed.

SURFACE GRINDERS.

Diamond No. 1, 24"x12".
Pratt & Whitney vertical with 12" wheel, 24" feed.

PRESSES.

Baird No. 1, double action.
Standard mchy. No. 1 screw press.
Standard machinery No. 3A.
Rudolph & Krummell No. 2A.

PIPE MACHINES.

Bignall & Keeler 8".
Forbes 8", hand and power.

PUNCHES AND SHEARS.

Canton No. 2 alligator shear, 1½" bar capacity.
Cockburn-Barrow power punch, 24" throat, 54" flywheel, wt. about 10,000 lbs.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Botwinik Brothers, Inc., - 67 Water St., New Haven, Conn.**

MILLERS.

15 Hendey No. 2½ Lincoln type milling machines, complete with countershafts, vises, oil pumps, etc. Price $110 each. f. o. b. New Haven, Conn. Wire, write or phone. Many other bargains.

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### FOR SALE BY

**A. F. Strafer, - - - 30 Church St., New York City**

BORING MILLS, VERTICAL AND HORIZONTAL.

12" Betts, geared feed, belt drive.
24" Bullard, v. t. l., New Era type.
36" Bullard, side head, v. t. l.
10'—16" Niles-B.-P., latest type.
12' Betts, heavy modern, m. d.
72" Gisholt, rapid traverse, m. d.
30" King, single turret head.
54" Bullard, rapid traverse.
51" & 42" Bullard, s. p. drive.
Horizontal Bement-Miles No. 8, 6' spindle.
Horizontal Betts, 4" bar, knee type.
Horizontal No. 25 Rochester, 3" bar, floor type.

DRILLS, UPRIGHT AND RADIAL.

6' Mueller plain, d. c. motor drive.
7' 6" & 5' Baush, belt drive.
6' Cincinnati Bickford, full univ.
5' Dreses full universal, s. p. d.
D-3 Colburn heavy duty, s. p. d.
31⅝ Baker, 2¾ capacity, s. p. d.
21" Barnes, s. h., b. g., p. f.
32" Snider upright, belt drive.

GRINDERS

No. 60 Heald cylinder, low price.
6"x32" Norton plain.
10"x36" Norton plain.
10"x24" Landis plain, self contained.
10"x24" Landis universal.
3"x18" Norton plain.
No. 11 Brown & Sharpe, 6"x32".
No. 3 B. & S. tool cutter.

GEAR CUTTERS.

36"x16" Newark, heavy duty.
24x8" G. & E., vertical type.
2½" Bilton automatic.
60"x11" Brown & Sharpe No. 8.

LATHES

50"x36' Bement-Miles, t. g.
50"x16' Fifield, belt drive.
50"x30' Pittsburgh, h. d., q. c.
44"x21' Niles-Bement-Pond, t. g.
60"x16' New Haven, t. g.
24"x10' R. K. LeBlond, taper att.
21'x10 LeBlond, heavy duty.
27'x10' LeBlond, turret on shear.

TURRET LATHES.

3½"x36" Acme, flat, modern, geared head, chuck equipment.
18" Libbey, s. p. d., rapid traverse.
24" Gisholt, motor drive.
28" Gisholt, fine condition.
3½"x36" Jones & Lamson, bar equipment, high ser.
2½"x26" Greenlee, like new, cheap.
No. 6 Brown & Sharpe.

MILLING MACHINES.

No. 4 Cincinnati plain, cone type.
No. 3 Kempsmith univ., cone.
No. 2 Brown & Sharpe plain.
No. 3 Brown & Sharpe plain, cone.
13-B Brown & Sharpe, mfg. type.
No. 5-B Becker, rotary table.
No. 3 Cincinnati vert., high power.
U. S. Mfg. Co. hand miller.

PLANERS.

12'x25'-4 h., belt drive (stone).
30"x8' D. & H. open side, 2 heads.
24"x24"x12' American, 2 heads.
54"x16' Wm. Sellers, 4 heads, b. d.
50"x50"x20' Wm. Sellers, 3 heads.
24"x24"x6' Gray, 1 head.

PUNCHES AND SHEARS.

No. 1 Hilles & Jones, 17" throat.
No. 6 Hilles & Jones, 42" throat.
No. 4 Hilles & Jones, double, 48" throat, motor drive.
No. 4A Quickwork rotary, m. d.
No. 6 Quickwork, ¾" capacity.
No. 10 Quickwork, 60" t., cap. 14 ga.
Pells triple combination, cap. 1½".
Angle shear, 8"x8" armor plate.
Lennox rotary, 44" throat, ⅝" cap.

MISCELLANEOUS.

Bending rolls, ¾"x20' Hilles & Jones.
Bending rolls, ⅝"x7' Wm. Sellers.
Bending rolls, ½"x10' 6" Southworth.
Broaching machine, Nos. 2 & 3 LaPointe.
Crane, 50-ton, 86' spar, P. & H., d.c.
Drill chucks, 1" capacity, new.
Fire pump, 1000 gal. Knowles, stm.
Flanging clamp, 96".
Forging mche., Ajax 1½" steel bed.
Hammer, 9" McDougal & Potter.
Hammer, No. 4, type "1", Nazel.
Surface plates, B. & S. 12"x18".
Tapping attach., Errington 1" cap.

## FOR SALE BY

**McMullen Machinery Company, - - Grand Rapids, Mich.**

Automatic, ⅜" Cleveland.
Automatics, No. 00 B. & S.
Band saw, 10" Napier, metal.
Cut-off saw, No. 4 N. & B.
Drill, 31" Barnes, sliding head.
Grinder, Cleveland, profile.
Grinder, No. 6-A Bryant.
Lathe, 9'x21½" Sundstrand, mfg.
Lathe, 2½x26 Greenlee, flat turret
Miller, No. 2-H Becker vertical
Pipe mch., 6" Merrill No. 6½.
Press, Chicago scrap baler.
Press, No. 3 Manville, d. a.
Presses, No. 6 Manville, pillar, (3).
Presses, No. 6B Manville, pillar, (2).
Shear, No. 14 Pettingell, rotary.
Shear, No. 2 W. F. Co. 36" gang.
Welders, No. 10-A Thomson vert. (7)

Ask for Complete List.

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## FOR SALE BY

**A. M. Stoehr Machinery Co., 560 W. Adams St., Chicago, Ill.**

Bolt cutters, 3 & 6-spindle Acme.
Boring mills, 42" Baush; 54 & 60" Niles; all have 2 heads; and others.
Compressors, 12 different sizes.
Drill presses, single spdl., L. & G.; 2-spindle H. & W.; 4 spdl. Foote-Burt; 4 spdl. Barnes; 22" Rockford.
Gear hobbers, cutters; No. 12 Barber-C., 48" & 60" G. & E.; 36" Fellows gear shaper, and others.
Grinders, Heald piston ring (2); No. 3 LaSalle plain and surface; 3x18" Norton, and others.
Header, No. 2 Manville.
Lathes, 22" to 44" McCabe; 18x8 Barnes, hvy. duty; 19x8 LeBlond. q. c. g.; 16x8 Flather; 15 & 24 spinning, and others.
Milling mchs., No. 25 Becker plain; No. 6 Whitney; No. 0 Rockford pl.; No. 3 Thurston dieing, & others.
Oil extractors, centrifugal, (8).
Pipe machines, 6" Jarecki.
Punch presses, No. 16 Bliss horning; No. 58 Crosby; and others.
Punch & shears, No. 3 L. & A., d. e., ⅝" thru ¾"; No. 14 W., d. e., 15" throat. No. 66 Badger, hand; No. 1-C New Doty, and others.
Riveters, 1½-B & No. 5-A High Speed; No. 1 Townsend; No. 1 L. & A., ¾" capacity; and others.
Saws, 9x9 Sterling high speed; 12" band, and eight others.
Screw machines, Nos. 2 & 3 Foster (12); Nos. 52 & 53 Acme, others plain and automatic.
Shears, Pittsburgh alligator, 1½".
Slitter, Fuller, 32".
Tapper, R. & S., ¾" capacity.
Welders, both spot and butt.
Wire strai't'g mch., ¼" Wells.

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## FOR SALE BY

**Bardons & Oliver, - - - Cleveland, Ohio**

### ENGINE LATHES.

| | |
|---|---|
| 18"x8' Flather, compound rest, p. f. & t. a. | $ 120. |
| 14"x6' Flather, compound rest, p. f. & t. a., (2) | 160. |
| 22"x8' Flather, compound rest & power cross feed | 180. |
| 14"x6' Reed eng. lathe, with compound rest & p. c. f. | 125. |
| 14"x6' P. & W. eng. lathe, with compound rest & p. c. f. | 135. |
| 32"x16' Gleason, double back gears, compound rest, power cross feed and rack feed to tail stock | 600. |
| 19"x8' LeBlond heavy duty, with compound rest, quick change gears, p. c. f., arranged for t. a. | 650. |
| 18"x8', with compound rest and power cross feed | 130. |
| 22"x8' Flather, compound rest, with power cross feed | 150. |

### MILLING MACHINES.

| | |
|---|---|
| Pratt & Whitney plain milling (Grant pattern) | $ 150. |
| No. 12 Kempsmith milling machine (Lincoln pattern) | 120. |

### PLANERS.

| | |
|---|---|
| 24"x24" Cincinnati, one head, arranged for motor dr., without motor | $ 1200. |
| 6"x6" Walter Bros., arranged for motor drive, without motor | 200. |

### MISCELLANEOUS.

| | |
|---|---|
| Thread milling machine, Trundle, with several collets. This machine is new, and has never been run | $ 1100. |
| Turret Lathes—We also have several of our older type No. 1—13/16 capacity Turret Lathes. These machines are new. Price, each | $ 400. |

## FOR SALE BY

**Boston Gear Works Inc., - Norfolk Downs, (Quincy) Mass.**

ELECTRIC HARDENING FURNACE.

One F. C. 206 Hoskins electric furnace for hardening high speed steel, complete with panel board, switches and ammeter. Wired for 550 volts, 75 amps. Used about 50 heating hours. Serial No. 9659. Purchased September, 1923. Cost new $1110.00. Make offer.

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## FOR SALE BY

**Herman L. Winterer, 943-53 N. Front St., Philadelphia, Pa.**

LATHES.

43"x17' 4½" Bement-Miles.
37½"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q.c.g.
27"x12' Bullard.
26"x11' Wickes q. c. g.
28"x10' Niles, q. c. g.,
25"x14' Hendey, q.c.g., taper attachment, oil pan, (2).
24"x14' Porter.
21½"x8' LeBlond.
20"x8'6" Walcott, d. b. g., c. g., (2).
20"x 8' Whitcomb Blaisdell, q. c. g.
19"x10' Draper, patent head.
18"x 8' Davis, q. c., d. b. g.
18" x 7' Chard, d. b. g., semi q. c. g.
18"x6' to 8' lathes, (6).
16"x 8' Greaves & Klusman, b.g., t.a.
14"x 8' Filsmith, q. c. g.
14—22"x6' Barnes extension gap.
And many others.

TURRET LATHES.

3½x28" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20x7' 6" Pratt & Whitney, back grd.
20x7' Bridgeport, 2½" h. s.
19"x7' Fay & Scott, back grd.
No. 22½ Garvin Monitor.
No. 3 Kempsmith.
14"x 6' Warner & Swasey.
16"x6' Johnson, back grd.
No. 3 Bardons & Oliver back grd.
14½"x5' 3" Pratt & Whitney, (2).
No. 3 Foster Kimball.

DRILL PRESSES.

42" Gang radial, s. p. speed box.
40" Barnes horizontal radials, (2).
36" Bickford radial, circular base, motor driven.
28" Rockford, q. c. g. feed, (2).
34" Barnes, s. h., geared face, comp. table.
24" Sibley & Ware, sliding head.
Drill presses, assorted sizes.

MILLING MACHINES.

No. 5 Cincinnati, table 9½x50½".
No. 15 Garvin, table 12x42".
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 3 Hendey-Norton, q. c. g.
No. 5-C Becker vert., rotary table.
No. 5-B Becker vert., table 14x43.
No. 1 Milwaukee plain.

PLANERS AND SHAPERS.

12'x10'x25' Sellers planer, 4 heads.
30"x30"x8' Putnam planer.
48" Morton draw-cut shaper.
39" Pedrick & Ayer, open side.
16" Hendey shaper, shifting belt.
16" Potter & Johnston crank shaper.
15" Lodge & Davis shaper.
14" Warren shaper.

MISCELLANEOUS.

Boring mill, car wheel, 60" Newton.
Boring, drilling and milling machine, 17½" Bement Niles horizontal.
Boring mill, No. 1 Selleis, horizontal, 2½" bar.
Boring mill, No. 1 Biusse, horizontal, 2½" bar.
Grinder, 12½"x5' Landis universal.
Grinder, disc, No. 17 Besly.
Hammer, 15 lb. Bradley helve.
Hammer, 25 lb. Little Giant, m. d.
Hammer, 40 lb. Bradley, helve.
Hammer, 60 lb. Hotchkiss.
Hammers, 60 lb Bellefonte upright, 2
Hammer, 500 lb. Merrill board drop.
Hammer, 750 lb. Merrill board drop.
Molding machine, 24" Taber, with roll over.
Keyseater, 18" stroke Morton.
Punch presses, all sizes, (55).
Punch, multiple, No. 5 H. & J., gate pat., 86".
Punch & shear, No. 2 H. & J., dbl. end, 20" th. cap., 1½" in 1".
Punch, No. 2 H. & J., 15" th., arch. jaw, 1½" in 1".
Punch, single end, 31" th., arch. jaw, cap. 1" in ¾".
Punch, horiz., L. V., grd., cap. 1".
Punch & shear, Industrial Wks, d.e., capacity ¾" in ¾"; shearing ¾"x6".
Riveter, air, 6' gap Allen, cap. 1½".
Riveter, air, 25" gap Allen, cap. 1".
Slotter, 14" Niles.
Tooth rounding mche., Schuchardt & Schutte.

Large assortment of General Machinery. Send for Complete Price List.

## FOR SALE BY

**J. E. Haetten & Co., Inc., 50 Church St., New York, N. Y.**

| | |
|---|---|
| Automatics, ⅝, ¾" Cleveland model 3, (40), each | $ 100. |
| Bolt cutter, 2" standard, double head, with dies | 400. |
| Boring mills, 42" Bullard, 2-head, power feed, and motor | 1500. |
| Boring mill, 48" Gisholt 2-head, geared feeds | 600. |
| Boring mill, 6" Beaman & Smith floor type, new | 4000. |
| Boring mill, No. 35 Landis floor type, like new | 4500. |
| Drill, 4' Niles semi-universal radial, scarcely used | 1500. |
| Engraver, E-3 Keller die sinker, motor, like new | 900. |
| Generator, 300 k. w., w. e., Parsons turbo, jet condenser | 1750. |
| Generator, 150 k. w., g. e., Ames engine, 240 d. c., double | 900. |
| Generator, 85 k. w., g. e., Watts, turbo, 110 d. c., good | 1000. |
| Grinder, 20"x10' Norton table type, surface, never used | 1000. |
| Grinder, No. 65 Heald auto. cylinder type, little used (3), each | 900. |
| Lathe, 50"x20' Putnam, single back geared, compound rest, good | 750. |
| Lathe, No. 66 Oliver wood turning, 11' bed, 40" swing | 1200. |
| Miller, 11x40 work surface, Lincoln type, good condition | 200. |
| Miller, No. 4 Brown & Sharpe universal, s. p. d., dividing head, vise | 1500. |
| Miller, No. 4 Cincinnati plain, s. p. d., high power, serial No. 4225-V | 1400. |
| Millers, No 2-M and No. 2 V Potter & Johnston continuous, each | 2000. |
| Miller, 54"x20"x20' Ingersoll, 8 heads, a. c motor 98% | 6500. |
| Miller, 35"x24"x10' Newton, 2 heads on loose rail, good | 2000. |
| Planer, 120"x60"20' Niles, 3 heads, excellent condition | 4500. |
| Thread miller, No 12 Lees-Bradner, heavy type, 10"x36" | 1500. |
| Turret, No 4 Warner & Swasey, g. f. head, 1½" capacity | 700. |
| Turret, 18" Gisholt universal, a. c. motor included | 1800. |
| Turret, No. 6-A Potter & Johnston, serials 15,700, very good (2), each | 500. |

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## FOR SALE BY

**Peninsular Machinery Co., 429-31 E. Jefferson Ave., Detroit, Mich.**

### LATHES.

13"x 5' Champion, l. c. g.
13"x 5' Blount speed lathe.
13"x 5' South Bend, (2).
13"x 6' Willard, (3).
13"x 6' Sebastian, (4).
14"x 6' Carroll-Jamieson, (2).
14"x 6' Reed, l. c. g., (2).
15"x 6' South Bend.
16"x 8' Bradford, l. c. g.
16"x 8' LeBlond, quick change.
17"x8' LeBlond rapid product'n, m.d.
21"x11' LeBlond, all geared, (2).
21"x12' LeBlond line bearing.
26"x10' LeBlond crankshaft.
3½x36 Lo-Swing.

### DRILLING MACHINES.

3-spdl. Henry & Wright, h. s., b. b.
22⅝" Sibley all-geared, p. f., with tap.
22⅝" Sibley all-geared, p. f.
28" Barnes, s. h., tapper.
No. 3 Baush multiple.

### MILLING MACHINES.

Briggs type A, (2).
No. 12 Brown & Sharpe.
No. 32 Kempsmith.
No. 33 Kempsmith plain.
No. 3H LeBlond plain, cone type.
No. 2 LeBlond all geared plain.

### TURRET SCREW MACHINES.

1¼" Defiance, f. h.
2½x26 Pratt & Whitney, a. c.
No. 3 Foster f. h. turret lathes, (2).

### GRINDERS AND POLISHERS.

No. 50 Heald cylinder.
20" Blount wet grinders.
No. 15 Bryant, motor drive.
No. 28 Besly, double spindle, m. d.
No. 4 Webster & Perks polishing.
Bennett & O'Connell dbl. sp. pol.
No. 23-B Valley City disc.

### MISCELLANEOUS.

Band saw, 6" Napier.
Centers, bench, Brown & Sharpe (3).
Cutting-off mchs., 4" Hurlbut-R., (2).
Gear cutter, No. 13 B. & S., bevel.
Gear generator, 6" Gleason, bevel.
Gear generator, 18" Gleason, bevel.
Gear hobber, No. 4 Farwell auto.
Gear tester, bevel, Gleason.
Hammer, drop, No. 5 Williams-W.
Lapping mchs., Bethel-Player, (2).
Metal cutter, No. 1 Gray.
Screw slotter, No. 1 National Acme.
Tooth round's, 12" Rochester aut. (2).
Tumbling barrels, No. 3-S Globe, (2).

## FOR SALE BY

**Brown Machinery Co., - - 2323 N. 9th St., St. Louis, Mo.**

Brake, 6′ D. & K. ..... $ 90.
Buffing lathe, Hisey 3 h. p. electric, a. c. ..... 100.
Buffing lathe, U. S 3 h. p electric, a. c. ..... 125.
Drill, Baush No. 3 multiple, cap. 30 spdls., rectangular bd. 20x40″. Price 1500.
Drill, radial, horizontal, No. 1 Barnes, d. e. ..... 350.
Grinder, cylinder, No. 60 Heald ..... 850.
Grinder, No. 14 Gardner, b. b., disk, dry, 20″ disks, good cond. Price 400.
Grinder, No. 6 Besly two-spindle disk, 20″ disks. Price ..... 350.
Grinders, three No. 2 Gardner single spindle, double disk, with universal tables; good condition. Price, each ..... 175.
Grinder, Bath universal, ..... 750.
Grinder, LaSalle automatic surface, good condition. Price ..... 275.
Grinder, No. 1 Brown & Sharpe universal, 10x24; good condition. Price 375.
Grinder, No. 14 Besly single spindle ring wheel. Price ..... 400.
Hammer, size A United, motor driven.
Lathes, 16″x6′ Monarch, heavy duty, each ..... 375.
Lathe, 20″x8′ Reed
Miller, No. 1B Fox, hand & pwr. fd., 18x6x14; new, never used. Price 400.
Polishers and buffers, drop head, New Britain, each ..... 50.
Press, geared, Stiles & Parker, weight about 9000 lbs.
Punch & stake riveter, No. 3 Hilles & Jones 60″ throat, rapid action; cap. full depth throat ⅞″ in 7/16″; 16,000 lbs; two stakes. Price ..... 1500.
Shear, Niagara 8′, 18 ga., foot power, square, splendid condition. Price 275.
Shear, Marshalltown No. 134 rotary splitting, cap. ¼″ plate; 4′ throat; arranged for motor drive. Like new. Price ..... 750.

Many other bargains. Write for List No. 124.

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## FOR SALE BY

**The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.**

Boring machine, 36″ Bullard, turret head, vertical.
Boring mill, 72″ Bullard vertical, 2 heads, motor drive.
Die sinker, No. 3 Pratt & Whitney.
Die sinker, No. 2 Pratt & Whitney.
Drill, 32″ Aurora, motor driven, tapping attachment.
Drill press, D-1 Colburn heavy duty.
Grinders, foundry, Norton heavy duty, (2).
Hammer, 100 lb. Massillon, steam.
Hammer, 1000 lbs. Billings & Spencer board drop.
Lathe, 22″x11′ Lehmann, geared head, taper attachment.
Lathe, 22″x12′ Mueller.
Lathe, 24″x12′ Schumacher & Boye.
Lathe, 36″x18′ American, cone head, taper attachment.
Lathe, 26″-44″ with 24′ bed McCabe double spindle.
Lathes, extension bed gap, 25″—45″x14′ Harrington, motor driven.
Millers, Gould & Eberhardt continuous, (2).
Milling machine, No. 3H LeBlond univ., with vert. and slotting atts.
Milling machine, Newton combination circular milling machine and saw for structural work.
Planer, 30″x30″x10′ Whitcomb, 1 hd.
Planer, 36″x16′ Cleveland open-side, 2 heads.
Pipe machines, 2″, 4″, 6″, 8″ & 12″ Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Planer, 36″x36″x12″ Woodward & Powell, motor driven, 3 heads.
Planer, 36″x36″x24′, Bement, 4 hds.
Press, No. 84 Toledo gr. str. side.
Press, No. 73½ Bliss trimming press, with side shear.
Presses, Nos. 18, 19 and 20 Bliss.
Punch and shear, No. 3 Hilles & J., dbl. end, motor dr.; punch end, 42″ thrt., cap. 1½″ thru 1/8″; shearing end, 36″ thrt., cap. 1″ plate, 2½″ round, 7″x1½″ flat, 5″x5″x⅝″ angle.
Punch and shear, Pels combination; punching cap. 1″ thick; shearing, 2″ rd., 2½″ squares, 6x6x½″ angles.
Radial drill, 5′ Pond, motor driven.
Radial drill, 6′ American full universal, motor driven.
Shaper, 24″ Gould & Eberhardt, b.g.
Shapers, 12″, 14″, 16″, 21″ and 24″ stroke, assorted makes.
Shaper, 3 Bement-Miles massive heavy duty, traveling head.
Turret lathe, flat, 3″x36″ Jones & L.
Turret lathe, No. 6½ Bardons & Oliver, 2½″ w. f. cap., cabinet base.

## FOR SALE BY

**McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.**

Bolt threader, No 734 Little Giant.
Clock, electric time system.
Demagnetizer, Walker.
Drills, Leland-Gifford 1-2-3 spindle, h. s., b. b.
Drills, 20", 24", 34" b. g., & tapping.
Drill, Rockford horiz. boring & drill.
Furnace, Holcroft 92 k.w. annealing.
Lathes, Davis 22"x10', Bridgeford 27x9, Walcott 18x8, q. c.
Milling machines, Hendey No. 2G univ.; LeBlond No. 4 heavy plain; Ohio No. 20 pl.; 1 Knight vert mill & drill; Becker "SD" vert, rotary table, 17200 lbs.; Ohio No. 3 plain.
Planers, Sellers 36"x36"x23', 2 heads; Pond 42"x42"x16', 2 heads.
Punch presses, R. & K. No. 3A incln, 3" stroke; Swaine No. 40, arch; Bliss No. 2½, double crank.
Punches, Felber 1" in 1", and Slitt shear; Scully, 20" throat, 1" in 1".
Saw, Nutter Barnes 8" cold.
Shapers, 26" open side planing; 15" & 16" Smith & Mills; 15" Kelly; 16" Cincinnati; 16" Milwaukee; 20" Ohio; 7" Rhodes.
Shears, 60" thrt. rotary slitting, (2).
Welders, 20 k. w. spot. Toledo, (2).
Welders, butt, Federal, ⅜" rds.

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## FOR SALE BY

**The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.**

### ENGINE LATHES.

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 8' Monarch, c.r., stand. pattern.
16"x 6' South Bend, c. r., complete.
16"x 8' Lodge & Shipley, old style, c. r., q. c. g.
18"x 8' Prentice c. r., l. c. g., chuck.
18"x 8' American, 3-step cone, d. b. g., q. c. g.
18"x 8' Schumacher-Boye & Emmes, c. r., 5 step cone, s.b g., q.c g.
18"x10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.

### TURRET LATHES AND SCREW MACHINES.

No. 2-A W. & S. g. h. tur. lathes.
No. 3-A W. & S. g. h. turret lathe.
26" Gisholt heavy duty turret lathe.
2"x24' Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto., (6).
No. 0 Brown & Sharpe auto. (2).
No. 2 Brown & Sharpe auto. (2).
No. 4 W. & S., p. h., a. c. & b. f.
No. 2 W. & S., p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a.c. and b. f.
18" Libby, factory rebuilt.
No. 2-G B. & S. automatics (3).
No. 2 B. & S. turret forming (2).

### DRILLING MACHINES.

22½" Cincinnati, sliding head, friction back geared, power feed.
24" W. F. & J. Barnes, sliding head, back geared and power feed.
24" Baker heavy duty.
2½" Mueller plain radial with t. a.
6' arm Western radial, with tap. att., arranged for motor drive.
12" Mechanics, friction driven.
6-sp. 12" Leland-G., h. s., b. b. (6).
12" 3-sp. Leland-G., h. s., b. b. (2).
14" 4-sp. Leland-G., h. s., b. b (2).
14" 2-spdle. Avey, h.s., b.b., (2).
14" 3-spdl. Henry & W., h. s., b. b.
14" 4-spdl. Henry & W., h. s., b. b.

### MILLING MACHINES.

No. 0 Bickett, hand, bench type (2).
Toledo hand milling machines (2).
No. 2-B B & S. plain, constant s. dr.
No. 1-Y Brown & Sharpe plain.

### GRINDERS.

No. 10 B. & S. plain, (2).
No. 6-A Bryant internal.
LaSalle combination pl. and surface.
No. 1 LeBlond cutter grinder.
Type "DE" Hisey-Wolf internal.
No. 11 B. & S. plain grinders, (2).
Plain emery wh'l stand with column.

### SHAPERS AND PLANERS.

18" Hendey friction, (2).
18" Walcott plain crank.
22"x22"x 5' Putnam planers (2).
24"x24"x 6' Gray planer.

### METAL CUTTING TOOLS AND SQUARING SHEARS.

Higley cold saw.
3" new Davis cutting-off machine.

### GEAR CUTTERS AND HOBBERS.

26" & 36" No. 3 Brown & S. auto.
No. 18 G. & E. vert, for spur & spiral.
No. 3 Barber-Colman.
No. 13 Brown & Sharpe auto.
No. 12 B. & S., bevel, (2).

### HAMMERS.

Quickwork body hammer.

## FOR SALE BY

**Cincinnati Machinery & Supply Co., 215 E. Pearl St., Cincinnati, O.**

SHAPERS.

12" Juengst, complete, $175.
16" Cincinnati crank shaper.
20" American crank shaper.
26" Ohio crank shaper.
28" Gould & Eberhardt, crank.
20" Steptoe crank shaper, $275.

MILLING MACHINES.

No. 1 U. S. hand millers, ($).
No. 2 Cincinnati plain, $285.
No. 3 Brown & Sharpe plain.
No. 4 Brown & Sharpe plain.
No. 3 Cincinnati vert., high power'd.

LATHES.

14"x 6' LeBlond, q. c.
14"x 6' Lodge & Shipley, q. c.
16"x 6' Reed, geared head, q. c.
18"x 8' Monarch, $325.
20"x10' Lodge & Shipley, q. c.
27"x18' Lodge & Shipley, q. c.
32"x16' Schumacher & Boye, q. c.

PLANERS.

24"x24"x 8' Gray, $550.
26"x26"x 8' Gray.
30"x30"x20' Hamilton.
48"x48"x14' Gray.

GRINDERS.

No. 60 Heald cylinder grinders.
10"x20 Landis.
10"x30 Landis.
No. 2 Brown & Sharpe universal.

RADIALS.

3' Bickford, cone drive.
3' Prentice, sgl. pulley, gear box.
2½' Gang, single pulley.
5' American.

Complete stock of machinery and supplies, new and used.
Write us your needs.

---

## FOR SALE BY

**Fitzsimmons & Cole Machinery Company**
**1208 House Building, - - - Pittsburgh, Pa.**

Air compressor, Ingersoll, 6x6", b. d.
Bolt cutters, 1½" to 4" Landis.
Boring mill, 62" Bullard, b. d.
Boring mill, 120" Niles, b. d.
Die sinker, No. 3 Pratt & Whitney.
Drill, radial, 6' American, univ.
Gear cutter, No. 13 Brown & Sharpe.
Gear planer, 24" Gleason bevel.
Grinder, 16"x48", Landis crankshaft.
Hammer, 200 lb. Bradley upright helve.
Hammer, 100 lb. Mayer.
Hammers, 2-B, 3-B, 4-B & 4-N Nazel.
Lathe, 18"x 8' LeBlond, q. c. g., b. d.
Lathe, 36"x16' American, q. c. g., b. d.
Lathe, 36"x18' American, q. c. g., b. d.
Lathe, 52"x34' Pittsburgh, 2 car., m. d.
Lathe, turret, No. 3 W. & S., plain.
Lathe, turret, 24" Gisholt, mtr. dr.
Lathe, turret, 5"x30" Bardons & O.
Miller, No. 3-A Garvin plain.
Miller, No. 3-B Milwaukee, plain.
Miller, No. 3-H LeBlond universal.
Miller, Ingersoll slab 36"x36"x18".
Pipe mch., No. 1-B Williams, ⅛ to 2"
Planer, 36"x36"x24' Pond, 4 hds, b. d.
Planer, 48"x48"x14' Gray, 3 hds, b. d.
Planer, 72"x72"x16' Betts, 4 heads.
Planer, 120"x90"x27' Detrick & H.
Planer, o. s., Cleveland, 36"x36"x16".
Planer, openside, 48"x48"x20' Clev'd
Press, No. 20 Bliss, o. b. 1, 3" stroke.
Press, baling hyd. No. 12-P Logemann
Press, No. 37½ Bliss, straight sides, 3" stroke.
Punch & shear, No. "A" L. & A., 2" thru 1½".
Punch & s., Pels, type RBLUEF-18.
Punch & s., Cleveland, 1½" thru 1".
Punch & shear, No. 3½ Hilles & Jones, 1½" thru 1½".
Punch, hor., Cleveland, 1" thru 1".
Punch, multiple, No. 5 Hilles & J., 120" between housings.
Riveter, Grant, bench type, ⅞" cap.
Riveter, Hanna, 70-ton, 18" reach.
Riveter, Hanna 30-ton, 75" reach.
Rolls, angle bending, 4"x4"x⅜".
Rolls, plate bending, No. 10½ Bertsch, m. d.
Rolls, plate bending, 16'x¾" Cleveland, m. d.
Sand blast, MacLeod, 36"x6".
Shaper, 24" Cincinnati, b. g., m. d.
Shaper, 24" Stockbridge, b. g., b. d.
Shear, alligator, Carlin., cap. 1¼" sq.
Shear, alligator, No. 3 Canton, 2" square, m. d.
Shear, angle, L. & A., cap. 8"x8"x1½".
Shear, guil., No. 3 H. & J., cap 2½" sq.
Shear, plate, No 4 H. & J., 36"x¾" cap.
Shear, plate, 120"x¾" Garrison, new.
Shear, rotary, Quickwork, 60" thr.
Shear, squaring, 9' Toledo, 3/16" cap.
Shear, squaring, 16"x¼" Geo. Ohl.
Shear, squaring, 12'x3/16" Toledo.
Straightening roll, 9-roll, rolls 3x42".
Testing machine, 100,000 lbs. Riehle.
Upsetter, 2½" Ajax, steel bed, bld.
Welder, No. 20-A Thompson, butt.

## FOR SALE BY

**Star Foundry Co., • 214 Front Street, • Albert Lea, Minn.**

Owing to changes in manufacture we offer:

| | |
|---|---|
| Air compressor, 6"x6" dbl. cyl. Curtis, tank, 12 h. p. gas engine, 200' hose with couplings, one No. 80 Cleveland hammer, 1—1½ air drill, all mounted on steel truck, portable. Price | $ 500. |
| Blower, cupola, No 5 Sturtevant, with c. s. | 50. |
| Boiler, 40 h. p. vertical. 120 lb. pressure. Price | 100. |
| Bolt and pipe cutter, Wiley & Russell, ⅜" to 1½" bolts, ½" to 2" pipe, c.s. | 200. |
| Drill press, 20" Champion, lever, wheel & power fd., bk. grs., with ck. | 75. |
| Grinder, 36" knife, 16" wheel | 75. |
| Grinder, Schmidt cyl., c. s., blower and hose | 400. |
| Hammer, 200 lb. upright power | 300. |
| Motor, 20 h. p. Gen. Elect., a.c., 220 v., 3 phase, 3600 r.p.m., with starter | 100. |
| Planer, 48"x48"x14' Niles, 1 head, c. s. Price | 500. |
| Set of Patterns, 6 sizes, fla-ks, jigs, blue prints for Star Power Hammers | 1,200. |

Nearly all above machinery is under belt and can be inspected at our plant. All are in good working order.

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## FOR SALE BY

**D. C. Ovlatt & Co., • • 1100 St. Clair Ave., Cleveland, O.**

PRESSES.

Bliss Nos. 1½ & 3½B, toggle.
Bliss No. 2 double crank.
Bliss "Stiles" Nos 3 & 4.
Bliss No. 62, flywheel or geared.
Bliss 68-C & 68-N double action.
Bliss 73½, 74½, 75½ presses.
Toledo 34-P, 35-P, 36-P presses.
Toledo 58½ trimming press.
Toledo 59 & 59½ s. s. presses.
Toledo 92-B double crank, geared.
Toledo 202-D special double crank.
Toledo No. 666 knuckle joint.
Ferracute P-4, PG-5, EG-22.
Consolidated 56, 65, 75, 165.

MISCELLANEOUS.

Automatics, Gridley ¾", 1¼", 1½".
Bulldozers, W. & W. 2, 4, 6, 30.
Drills, Colburn D-1, D-2, D-3.
Drill, No. 17 Foote-Burt 4-spindle.
Grinders, disc, Gardner 6 & 7.
Grinder, Pratt & Whitney 14".
Rivet hammers, 3A, 4A, 5A, 6B.
Shear, alligator, Canton No. 5.
Shear, alligator, Hilles-Jones No. 2.
Shear, Niagara 416-C slitting.
Shear, Toledo 36"x18 ga. power.
Tapper, Garvin No. 2 automatic.
Tumbling barrels, 18"x30"x48".
Turret lathes, W. & S. 4 and 6.
Turret lathe, Libby 18".
Wire former, No. 3 Manville.

Over 400 Machine Tools in stock. Send us your inquiries.

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## FOR SALE BY

**The Washburn Company, • 6126 S. LaSalle St., Chicago, Ill.**

| | |
|---|---|
| Air compressor, 10x8 Ingersoll, serial No. 13931, with 36x72 tank | $300. |
| Blower, Garden City, 18" fan, brand new | 40. |
| Converter, d. c. & a. c., 10 k. v. a., 220 volt | 75. |
| Cyanide furnace, Gilbert & Barker E-6 | 60. |
| Drill presses, bench, (3), each | 10. |
| Drill presses, 2-sp. bench (2) ea. | 25. |
| Drill press, upright | 25. |
| Emery wh. stand, 4", 2-spd. cone, | 25. |
| Feed water heater, boiler | 50. |
| Grinder, No. 1 Besly disc | 35. |
| Generator, Kester Electric, 5-10 volts, 1,000 amp., d. c. | 175. |
| Hack saw, power | 20. |
| Hammers, 100 lb. poppet rope (2), each | 100. |
| Lathe, speed, | 20. |
| Miller, No. 8 Kempsmith | $225. |
| Miller, B. & S., Lincoln type | 100. |
| Plating barrel, 24" Hanson & Van W., center anode type | 100. |
| Polishing machines, Hanson & Van W., with c. s., each | 15. |
| Press, foot, | 10. |
| Shaper, 16" Gould & Eberhardt, | 175. |
| Shear, alligator, opening of jaws 1½", length of jaws 34½" | 75. |
| Swaging mch., No. 2 Goodyear, | 100. |
| Swaging machine, Dayton type, jaws 3½x1¾", | 80. |
| Swaging machine, Dayton type, jaws 1¾x11/16, | 60. |
| Time clock, Day time register, | 75. |
| Turret lathe, small size, | 40. |
| Turret lathe, Garvin, 12" swing, | 50. |
| Turret lathe, b. g., p. f. | 100. |
| Turret lathe, W. & S. No. 4, | 150. |

## FOR SALE BY

**The H. A. Smith Machinery Co., - - Syracuse, N. Y.**

Automatic, No. 53 National Acme 4-spindle.
Automatic No. 55 National Acme 4-spindle.
Boring mill, 42" Gisholt, motor driven.
Boring mill, 36" Gisholt.
Chucking lathe, Jones & Lamson automatic.
Chucking lathe, 12x6 Hartness automatic.
Gear shaper, Fellows No. 62.
Grinder, 6x32 Brown & Sharpe plain.
Grinder, 10x72 Landis, plain.
Grinder, 16x52 Landis, plain.
Grinder, No. 11 Brown & Sharpe plain.
Miller, Brown & Sharpe No. 13-B plain.
Miller, Brown & Sharpe No. 5 vertical.
Miller, Brown & Sharpe No. 3 vertical.
Planer, 72"x54"x24' Pond, 4 heads.
Planer, 36"x36"x24' Pond, 4 heads.
Radial, 4' Hammond sensitive, with tapping attachment.
Radial, 5' Fosdick full universal.
Turret lathes, 21" Gisholt, (3).

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## FOR SALE BY

**Wm. C. Johnson & Sons Machinery Co.,**

**1211-1223 N. 12th St., St. Louis, Mo.**

### PLANERS.

30"x30"x 8' Cincinnati.
32"x30"x 7' Whitcomb.
36"x36"x10' Flather, 2 heads.
48"x48"x14' Gray, 2 heads.

### GRINDERS.

30"x84" Diamond face grinder.
5"x18" Ott.
10"x30" Ott universal.
6"x30" Pratt & Whitney plain.
No. 16 Brown & Sharpe, 10"x72".
12"x48" Landis plain.
No. 50 Gardner disc.
Greenfield universal.
No. 2 LaSalle surface grinder.
Yankee twist drill.

### DRILLS.

2-spindle Henry & Wright, 16".
3-spindle Henry & Wright, 16".
3' arm Carlton.
3½' arm Carlton.
3' Canedy-Otto post drill.
20" Canedy-Otto, back geared.
24" Aurora, sliding head.
38" Bickford, sliding head.

### LATHES.

14"x 6' Monarch, q. c.
14"x 6' Sidney, q. c.
15"x 8' Von Wyck, q. c.
18"x 8' South Bend.
18"x 8' Walcott.
26"x13' Putnam.
20"x10' Lodge & Shipley.
24"x14' Economy, p. c.
30"x16' Schumacher & Boye, q. c.

### MILLING MACHINES.

No. 1½ Rockford plain.
No. 1 Knight vertical.
No. 12 Kempsmith.
No. 33 Kempsmith.
Nos. 0 and 3 Burke bench.
Whitney hand miller.

### MISCELLANEOUS.

Air compressors, (6).
Acetylene generator, 100 cu. ft. cap.
Arbor press, 50-ton Lucas.
Arbor press, No. 8 Greenerd.
Belt lacer, large, Peerless.
Bolt cutter, 2" Reliance.
Bolt cutter, 3" Standard.
Boring machine, horizontal, No. 2 Pawling & Harnischfeger.
Bulldozer, 75-ton Lourie hydraulic.
Draw bench, Standard Mchry. Co.
Engines, Corliss, 75 to 200 h. p.
Gear generator, No. 5-A Lees-Bradner, max. swing 14".
Hammer, 90 lb. Justice.
Hammer, No. 2-A High Speed.
Pipe machine, 16" Bignall & Keeler.
Punch, No. 5 Long & Allst., 5" thrt.
Punch, No 7 Long & Allst., 4" thrt.
Riveter, model A Schuster.
Screw machine, No. 6 Woods.
Screw machine, 3"x36" Jones & L.
Screw machine, 2½" Gridley automatic, 4-spindle.
Tapping machines, automatic No. 1 Garvin, (2).
Tilted turret lathes, Nos. 2, 3 and 4 Wood.

## FOR SALE BY

**M. A. Wertman, - - 505 Superior Bldg., Cleveland, Ohio**

Blue print machine, 42" Peas auto.
Drill, 24" Aurora, m. d., tapping att.
Drill, 5-spindle Detroit semi-auto.
Grinder, 24" Ingersoll cutter.
Grinder, No. 1 W. & M. surface.
Lathe, 20"x10' American hvy. duty.
Lathe, 18"x10' Bradford, grd. hd.
Milling mche., No. 3 Cincinnati h.p.
Press, No. 5½ Toledo, near new.
Swager, ¾" Etna.

## FOR SALE BY

**Little Giant Company, - - - Mankato, Minn.**

Direct from the User.

Drill, radial, 36" Hilbert.
Grinder, No. 2 Landis.
Grinder, No. 75 Heald internal.
Jolt rollover mould. mch., No. 2 U.S.
Miller, No. 6 Whitney, hand.
Planer, 48"x48"x16' Gray, Al cond.
Rollover machine, 22" International.
Shaper, 24" Smith & Mills.

## FOR SALE BY

**The Akron Equipment Co., - - - - - Akron, Ohio**

| | |
|---|---|
| Automatics, Gridley 4-spindle, 1¼" cap., serials 2695 & 2070, (2), each.... | 8900. |
| Automatic, National Acme 4-spindle, 1¼" capacity, serial 9201 | 750. |
| Grinder, National Acme 6"x22" automatic surface | 60. |
| Lathe, 12"x8' Fitchburg, not screw cutting | 70. |
| Screw machine, hand, 1" Leisy-Patton. Fine condition | 190. |
| Threading machine, National Acme 2-spindle, 1" capacity | 125. |

## FOR SALE BY

**Clark Machinery Co., 1235-45 St. Clair Ave., Cleveland, O.**

Bolt cutters, 4-sp. Webster & Perks.
Bolt threaders, ½" Nat'l Acme 2 sp.
Boring mill, No. 2 Rockford.
Chucking grinders, No. 6 Bryant.
Gear cutter, Sloan & Chase.
Gear cutters, Meiselbach.
Grinders, Pratt & Whitney plain.
Planer, 42"x42"x10' Gray, 2 heads.
Radial drill, Henry & Wright h. s.
Radial grinder, Rivett.
Thread miller, Milled Screw Co.
Turrets, P. & J. 5A & 6A.

## FOR SALE BY

**Rosenfeld Machinery Co., - 942 W. Lake St., Chicago, Ill.**

Chain hoists, ½ to 12 tons, Yale & Towne and Ford triplex.
Drill presses, all sizes.
Milling machine, vertical, Becker model C. S.
Millers, hand, Van Norman No. 1.
Motors, a. c., all sizes, 3 ph., 60 cy.
Motors, a.c., 3 ph., 25 cy., 7½ to 50 h.p.
Radial drill, 2' American.
Tumbling barrels, 2 compartments, 6"x15" each, for small work.

## FOR SALE BY

**Passman Bros., - 705 W. Washington Blvd., Chicago, Ill.**

Drill presses, 20", b. g., power feed, with automatic stop, wheel and lever feed, (25).
Hammer, 1,000 lb. Erie, steam drop.
Hammer, 500 lb. Erie, steam drop.
Hammer, No. 9 Beaudry.
Lathes, new 16"x 6' Cisco, quick change gear, (2).
Lathe, new 18"x10" Flather, q. c. g.
Presses, trimming, No. 53 & 54 Consolidated, with side shears, arranged for motor drive.
Press, Robinson No. 3.
Press, geared, No. 53 Ferracute.
Universal angle plates, 18x14, weight 325 lbs., (4).

**FOR SALE BY**

**Iowa Falls Machine Works, - - Iowa Falls, Iowa**

ENGINE LATHE.

A 25"x10' heavy duty LeBlond engine lathe, with compound rest and turret for carriage; practically as good as new; get prices and particulars.

---

**FOR SALE BY**

**W. P. Little Co., - West 9th & Front Sts., Cleveland, Ohio**

LATHES.

14"x 6' LeBlond, q. c. g.
16"x 6' LeBlond, q. c. g.
16"x 6' Bradford, q. c. g., t. a.
16"x 6' Hendey, q. c. g., tap att.
16"x10' Cincinnati, d. b. g., q. c. g.
26"x 9' Bridgeford, d. b. g., (new).

MILLING MACHINES

18" Cincinnati plain.
No. 13 Garvin b. g. plain.

RADIAL DRILLS AND TAPPER

4' W. E. Gang plain radial.
¾" Rickert & Shafer radial tapper.

PUNCH PRESSES.

No. 18½ Holden, o. b. i.
30" Geared arch press, old type.
S. G. 55 Ferracute double crank.
No. 14½ Williams & White, (2).

GRINDERS, INTERNAL AND EXTERNAL SURFACE.

No. 3 Modern universal.
16" Heald rotary surface.
14" Pratt & Whitney vertical surface.
No. 75 Heald internal, (8).
No. 6 Bryant internal, (2).

MISCELLANEOUS.

Air compressors, 4½"x4½" & 6"x6".
Bolt cutter, 2" Reliance.
Boring mill, Lucas horiz 2½" bar.
Broach, 3-A LaPointe Hudson.
Hammer, 250 lb. Morgan steam.
Hammer, 50 lb. Bradley, compact.
Screw mchc., No. 1 Brown & S. auto.
Spline miller, 2" Pratt & Whitney.

Partial list. Send us your inquiries. 150 other tools in stock.

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# Surplus Machine Tools— Rebuilt

| | | |
|---|---|---|
| CRANE— | 10' & 12' span with 2 & 3 ton hoists, comp. (will quote). | |
| DRILLS— | 24" Cincinnati cone drive upright | $ 150. |
| | 14" Sensitive $30; 15" sensitive, | 40. |
| GRINDERS— | 14"x72" Queen City plain cylindrical, | 1500. |
| | 8" or 10"x30" Queen City plain cylindrical | 1000. |
| LATHES— | 20"x10' LeBlond, cone and belt shifter | 650. |
| | 18"x 8' LeBlond, cone and belt shifter | 500. |
| | 14"x 6' LeBlond, cone and belt shifter | 275. |
| | 3"x36" Jones & Lamson bar machine, | 700. |
| | 3"x36" Jones & Lamson chucking machine | 650. |
| | 2¼"x24" Jones & Lamson chucking machine | 550. |
| MILLERS— | No. 3 S P. D. LeBlond, plain, & vertical att. | 1000. |
| | No. 2 Cone LeBlond, plain | 5 0. |
| | 10" Universal, dividing head, LeBlond | 100. |
| PLANERS— | 32"x32"x16' Gray (2 rail heads) | 2500. |
| | 30"x30"x16' American (2 rail heads) | 2000. |
| | 26"x26"x12' Whit-Blais (2 rail heads) | 1400. |

Numerous small tools and other equipment for manufacturing and jobbing shop.

Various sizes Queen City back geared Crank Shapers and plain Cylindrical Grinders

**Queen City Machine Tool Co., 1401 Sycamore St. Cincinnati, Ohio**

# Standard Steel Car Co.

*Offers For Sale*

# Boiler and Tank Shop Equipment

We offer the following desirable Equipment for sale. All set up in our Hammond, Indiana, Plant—in good running order and prices considerably under present replacement values:

**1—Southwark Hydraulic Riveter, 23' Gap.**

**1—Wood Hydraulic Riveter, 21' Gap.**

**1—Chambersburg Hydraulic Riveter, 48" Gap.**

**1—No. 2 Lennox Bevel Shear.**

**1—16' Covington Plate Planer, 1¼" Capacity.**

**1—Beatty Horizontal Punch, 16" Throat, 1¼"x1".**

**2—20' Cleveland Wall Radial Drills.**

**1—Bellevue Furnace, 24"x60"x18".**

**2—Strong, Carlisle & Hammond Furnaces, 36"x72"x18".**

**2—10 Ton Milwaukee Cranes, 22' 6" Span, 250 volt D. C. Motors.**

**1—3 Ton Pawling & Harnischfeger Crane, 29' Span, 220 Volt A. C. Motors.**

**1—3 Ton Pawling & Harnischfeger Crane, 37' Span, 220 Volt A. C. Motors.**

Parties desiring to make inspection are directed to call on Mr. E. Eiselt, Manager of Works, Standard Steel Car Company, Hammond Works, Hammond, Indiana.

All communications relative to complete descriptions and prices, should be directed to our agents,

## Reliance Machinery Sales Company

**1407-9 Brighton Road, PITTSBURGH, PA.**

# ReMANUFACTURED MACHINE TOOLS
-(ORIGINATED BY US)-

REG. U. S. PAT. OFF.

**Largest stock of high grade machine tools in America. All principal makes and models. Every one guaranteed. Save 25 to 60 per cent on prices.**

**This is only a partial list. Write for price on any tool you need, whether listed below or not.**

# IMMEDIATE DELIVERY

### LATHES

14—20"x 8' LeBlond.
5—20"x12' American.
5—20"x16' American.
20—21"x10' LeBlond.
10—24"x11' Cisco.
1—24"x12' Reed Prentice Grd. Hd.
3—24"x12' Providence.
1—24"x15' Chard.
7—25"x10' LeBlond.
10—25"x12' LeBlond.
24—26"x10' Canada.
10—26"x18' Bridgeford.
18—32"x12' Pittsburgh.
1—36"x36' Putnam geared head.
4—36"x30' Pittsburgh Geared Hd.
3—36"x37' Niles Bement Pond.
1—51"x20' LeBlond.
1—56"-64"x18' Johnston.
1—60"x18' Johnston.

### MILLERS

5—No. 2 Kempsmith.
1—No. 3 Kempsmith Universal.
2—No. 2 Rockford.
1—No. 2B Rockford Universal.
2—No. 28 Ohio.
8—No. 2-B Hvy. Brown & Sharpe.
4—No. 3 Kempsmith.
9—No. 3-B Hvy. Brown & Sharpe.
2—No. 4 Cincinnati.
2—No. 4 LeBlond.
3—No. 4-B Becker.
2—No. 3 Cincinnati Vertical.
2—No. 4 Cincinnati Vertical.
4—No. 5-C Becker.
3—No. 6 Becker.

### PLANERS

1—24"x24"x 6 American.
2—36"x36"x10' Bickett.
1—36"x36"x12' Woodward & P.
3—36"x36"x18' Cincinnati.
3—42"x42"x10' Gray.
1—72"x56"x36' Cincinnati.

### PRESSES

1—No. 34 Toledo Solid Back.
1—No. 69 Stoll Geared.

### BORING MILLS—Vertical

2—24" Bullard "New Era."
1—42" Gisholt.
1—52" Gisholt.
1—60" Pittsburgh.
1—62" King.
2—72" Cincinnati.
7—72" Gisholt.
1—84" King.

### BORING MILLS—Horizontal

1—3" Foote-Burt.
1—No. 0 Giddings & Lewis.
1—No. 1½ Giddings & Lewis.
1—No. 3 Rochester Floor Borer.
1—5" Detrich & Harvey Floor Bor.

### DRILL PRESSES

1—20" Barnes all geared.
2—24" Barnes all geared.
1—No. D-2 Colburn.
1—No. 24 Foote-Burt.
1—No. 25 Foote-Burt.
5—No. 310 Baker.
1—3-spindle Henry & Wright.

### RADIAL DRILLS

1—5' Niles-Bement-Pond.
2—7' Western.

### GRINDERS

3—6"x18" Landis.
12—10"x36" Norton.
3—10"x72" Norton.
3—12"x26" Modern.
11—14"x50" Norton.
1—18"-30"x96" Norton Gap.
1—20"x96" Landis.

***Our Guarantee: Your money back if you return a machine within thirty days, freight prepaid.***

**HILL, CLARKE & CO. of CHICAGO,** 649 W. Washington Blvd., CHICAGO, ILL.

Telephone Haymarket 7660 — H1-1-RTG — Cable Address "Remand"

# Guaranteed Rebuilt Machine Tools

30"x12' Heavy Duty LeBlond Lathe, qk. change, double back gear.
**Price $1400.**

36"x36"x14' American Planer.
**Price $850.**

No. 3B Brown & Sharpe Milling Machine, single pulley drive.
**Price $750.**

No. 3 Cincinnati Milling Machine, single pulley drive.
**Price $850.**

36" Fellows Gear Shaper.
**Price $700.**

No. 4 LeBlond Milling Machine, Universal, cone dr., double back gear.
**Price $850.**

18"x8' Barker Lathe, loose change gear.
**Price $350.**

16" Barker Back Geared Crank Shaper.
**Price $365.**

24" Bullard Rapid Production Turret Lathe.
**Price $800.**

18" Barker Single Geared Crank Shaper.
**Price $200.**

**WM. BARKER & CO.**
**COVINGTON, KY.**

# FOR SALE

**4—3 SPINDLE** National High Speed **DRILL PRESSES $110.00** each.

**6—NO. 1 CINCINNATI** Back Geared Plain **MILLING MACHINES $275.00** each.

4 Spindle **NATIONAL ACME** Screw Machines

**7—No. 52— ⅞" Capacity---- $425.00** each.
**1—No. 53—1⅜" " ---- 475.00 "**
**3—No. 55—1⅝" " ---- 600.00 "**
**3—No. 56—2¼" " ---- 650.00 "**

**CINCINNATI AUTOMATIC MACHINE CO., Cincinnati, Ohio**

## The Rights to Manufacture

# The GARVIN Line

## FOR SALE

This offer includes all drawings, patterns, jigs and fixtures for the manufacture of GARVIN universal, plain and vertical milling machines, automatic index machines, dividing heads and tail stocks, with manufacturing and service rights and customers' list.

Approximately $5,000,000 worth of machines sold. $100,000 can be salvaged from machines in process of manufacture. Annual service business about $15,000.

***A Real Opportunity For You***
***If You Are Seeking a Good Line***

**No need to tell you more.**
**You know these machines.**

*Write—Wire—Call or Phone for Details*

**Industrial Plants Corporation**
***National Liquidators***
**25 Church Street, New York City**
**(Phone Rector 2270)**

## RADIAL AND UPRIGHT DRILLS

5' N.-B.-P. semi-univ., speed box.
4' American plain, speed box drive.
3½' American triple purpose plain radial, speed box. 95% new.
3' Bickford plain, speed box.
4' American high-speed sensitive radial, 95% new.
28" Aurora upright, tapping attach.
26" W.F.& J. Barnes upright, tapping.
24" Milwaukee upright drill press.
28" Cincin'ti-Bickford upright speed box, tapping.
24" Rockford upright drill press.
22" W. F. & John Barnes upright.
20" Superior upright drill press.
3-spdl. Demco hi-speed, b. b. sens.
4-spdl. high-speed Allen, sensitive.
2-spdl. H. & W. hi-speed b. b. sens.
Sipp high-speed single spindle ball bearing sensitive.

## MILLING MACHINES

No. 4 LeBlond univ., cone pulley.
No. 3 LeBlond univ., cone pulley
No. 2 Hi-Power Cin'ti univ., sgl pul.
No. 2 LeBlond univ., cone pulley.
No. 3-B heavy B. & S. plain, sgl. pul.
No. 3 Hi-Power Cin'ti pl., sgl. pul.
No. 3 Cincinnati plain, cone pulley.
No. 2-B heavy B. & S. pl., sgl. pul.
No. 2 LeBlond plain, cone pulley.
No. 0 Cin'ti plain, cone pul., comp.
No. 6 Whitney hand miller, belt dr.
No. 6-B Becker vert., cone pulley.
No. 22 Garvin vert., cone pul., comp.
28" Cin'ti duplex, belt dr., complete.
Gooley & Edlund Briggs Type Manufacturing, belt dr., complete.

## LATHES

36"x22' Putnam, tri. grd., semi-q. c.
30"x16' H. S. & G. heavy duty, q.c.
30"x12' LeBlond heavy duty, qk. ch.
24"x14' Schumacher-B. stand'd c. g.
22"x12' Rahn & Larmon, qk. ch. gr.
20"x10' Bradford, standard ch gr.
18"x10' Reed, stand'd ch. gr., taper.
18"x 8' Lodge & Shipley, qk. ch. gr.
18"x 9' Bell, semi-quick change gr.
16"x 8' Hamilton, quick change gr.
16"x 6' Pratt & Whitney, qk. ch. gr.
16"x 6' Hendey, qk. ch. gr., taper.
14"x 8' Hamilton tool room, qk. ch., taper, relieving and collet attach.

## TURRET LATHES & SCREW MACHINES

3½"x36" Acme flat turret, grd. head.
2½"x24" Pratt & Whitney flat turret, geared head.
No. 6 Warner & Swasey turret lathe.
No. 4 Bardons & Oliver turret lathe.
No. 4 Brown & Sharpe turret lathe.
No. 1 B. & S. wire fd. screw mch.
No. 1 S. P. Garvin screw mch., new.

## GRINDERS

No. 60 Heald cyl., complete equip.
No. 70 Heald inter. complete equip.
No. 2 Brown & Sharpe automatic surface, magnetic chuck.
6"x32" Norton plain cylindrical.
6"x15" Fitchburg plain cylindrical.
No. 1 Brown & S. univ. cylindrical.
No 2 Ohio universal tool and cutter.
No. 1 LeBlond univ. tool & cutter.
No. 1 Cincinnati tool and cutter.

## GEAR CUTTERS

No. 4—48" Brown & S. auto. spur.
No. 3—24" Cincinnati auto. spur.
24" Gould & Eberhardt automatic spur gear cutter.
No. 12 Brown & Sharpe auto. spur and bevel, cap. gears up to 12".
No. 12 Barber-Colman gear hobber.
18" Gould & Eberhardt gear hobber.

## SHAPERS AND PLANERS

28" Columbia hvy. duty bk. grd. cr
20" Smith & Mills back grd. crank.
16" Wm. Barker back geared crank.
15" Potter & J. univ. tool room.
42"x36"x10' American, one head.
30"x30"x 8' Cincinnati, one head.
30"x30"x 8' Gray, one head.
36"x36"x14' American, two heads.

## MISCELLANEOUS

Arbor presses, Greenerd Nos. 4 & 5.
Bolt cutter, ½" Acme, single spindle.
Bolt threader, 1½" Landis. 95% new.
Broaching machine, No. 3 Lapointe.
Keyseater, No. 1 Davis, cap. 1".
Keyseater, No. 3 Baker, cap. 3".
Press, power, No. 3½ Toledo o. b. i.
Press, No. 4-P Ferracute, power.
Riveting hammers, Nos. 2A, 3A & 4A High Speed
Rivet spinner, 5/16" Grant noiseless.
Shear, 8' No. 296 Niagara, power square, cap. 18 ga.
Shear, 30" P. S. & W., foot pwr. sq.
Spot welder, Federal Jr., cap. ⅛".
Spot welder, National, cap. ¼".

***And many others. Send for complete list of bargains.***

# EASTERN MACHINERY CO.

**No. 408 East Pearl St., Cincinnati, Ohio**

**All of the above machines carried in our stock in Cincinnati.**

# SLIGHTLY USED
## *BUT*
# EQUAL TO NEW

36" Gould & Eberhardt Spur and Bevel Gear Cutter.

No. 12 NATCO Multi-Driller, with 10"x16" head, bored for twelve, equipped with seven 1" and one 1¼" spindles, tapping attachment.

10"x72" Norton Plain Cylindrical Grinder.

No. 1½ Cincinnati Plain Cone Type Milling Machine.

**Marshall & Huschart Machinery Co.**

**17 South Jefferson Street,**
**CHICAGO, ILL.**

# Must Vacate Our Warehouse —

## *Hundreds Of*

| | | |
|---|---|---|
| **BORING MILLS:** | 30" Warner & Swasey Vert., table 29" dia. | $200. |
| | 36" Niles, 2 swivel heads, table 33" dia. | 800. |
| | 36" 48" Bridgeport Extension, 1 swivel head | 325. |
| | 51" Bullard, 2 swivel heads, table 50"x3½" | 500. |
| | 72" Betts, table 60" dia., 7½" thick, 2 hds. | 750. |
| **DRILL PRESSES:** | 2 New Burke No. 1 Bench Sensitive, each | $ 20. |
| | 4' Bickford Radial, single pulley drive | 450. |
| | 4' Dreses Radial | 400. |
| | 8' Pond Radial | 475. |
| **GRINDERS:** | Webster & Perks D. E. Heavy Foundry Type, takes wheels 24"x4" | $ 50. |
| | Norton D. E. Heavy Foundry Type, takes wheels 24"x4" | 50. |
| | Landis No. 3 Universal, 12"x42" | 500. |
| **LATHES:** | 19"x10' LeBlond, b. g., hollow spindle, motor drive, as is | $150. |
| | 21"x12' Johnson, hollow spindle, taper attach. | 275. |
| | 24"x16' 6" Johnson, solid spindle | 375. |
| | 26"x10' 6" Walcott Heavy Duty Quick Change Gear, dbl. bk. gr., hollow spdl., 7, each | 650. |
| | 24"x6' Gisholt Turret, 2 each | 950. |
| | 3"x36" Jones & Lamson Flat Turret, as is | 200. |
| | 3"x36" Jones & Lamson Flat Turret | 950. |
| | 2¼"x24" Jones & Lamson Flat Turret | 850. |
| **MILLING MCHE.:** | Cincinnati No. 3 Plain, overhanging arm, table 12"x3'11", as is | $ 250. |
| **PRESSES:** | No. 2 Baird Foot Power, 2¾" stroke, bolster plate 8"x6", bench type without stand, 3, ea. | $ 10. |
| | Straight Side Punch Press, ¾" stroke, 10¾" bet. housings, mounted on iron stand | 50. |
| | No. 56 Knuckle Joint Embossing Press, 60 tons | 150. |
| **PUNCHES and SHEARS:** | Waterbury-Farrell Rotary Shear, 14" throat, knives 4½" dia. Cap. about 16 gauge | $ 45. |
| | Mahoning Single End, 32" throat, cap. 1"x1" | 375. |
| | Covington No. 2 Sgl. End, 12" thrt., cap. 1x1" | 375. |
| **HAMMERS:** | 25 lb. Bradley Cushioned Helve | $140. |
| | 40 lb. Bradley Cushioned Helve | 175. |
| | 800 lb. Bement Single Frame Steam Forging | 475. |
| | 2000 lb. Bement-Miles Sgl. Frame. Stm Forg'g. | 1300. |
| | 2000 lb. Bement-Miles Steam Drop | 475. |

# Russell Machine Company,

# Attractive Prices To Move Stock

## *Other Bargains!*

| | | |
|---|---|---|
| **PLANER:** | 48"x48"x22' Pond, 2 Rail & 2 Side Heads ... | $1800. |
| **SLOTTER:** | Niles 15", Crank, 30" dia. rotary table..... | $375. |
| **SHAPERS:** | Gould & Eberhardt 14" Single Geared Crank.. | $160. |
| | Cincinnati 24" Back Geared Crank..... | 650. |
| **MISCELLANEOUS:** | Baler, No. 8 Poston Hopper Door Steel, makes bale 16"x22"x28" weighing 100 lbs..... | $ 10. |
| | Bending or Folding Machine, hand power, to work on bench. Bending length 12". ..... | 10. |
| | Blowers, 2 No. 8 Sturtevant Pressure, each..... | 25. |
| | Blowers, 2 No. 8 Buffalo Volume, each ..... | 25. |
| | Bulldozer, No. 2 Williams & White..... | 275. |
| | Chain, about 600 lbs. Shop Chain, ⅞" link, 1½¢ per pound. | |
| | Chucks, 9 drill, will take 1/16" up to ⅝". Lot... | 12. |
| | Chuck, Newton 9" Independent 3-Jaw Steel... | 10. |
| | Gas Engine, 15 H. P. Fenner Horizontal..... | 75. |
| | Lathe Dogs, 50 assorted sizes, will take work from ⅛" to 6" dia. Good condition. Lot $12.50. | |
| | Lathe, Shaper and Planer Steel Turning Tools & Chisels, 100 lbs., Lot..... | $ 5. |
| | Milling Mch. Arbors 28 & 32" Long, for both.. | 15. |
| | Milling Cutters, 75 assorted sizes, fine condition. ½ present new cost. | |
| | Pipe Folder, 32" hand power for 24 gauge and lighter. For use on bench ..... | 25. |
| | Pipe Machine, Eaton-Cole-Burnham 1" to 4".. | 225. |
| | Pipe Machine, Eaton-Cole-Burnham 2½ to 8".. | 450. |
| | Planer Chuck, adjustable, will take in work up to 23" wide, 33" long ..... | 15. |
| | Platform Scale, Fairbanks, will weigh up to 1000 lbs., excellent condition..... | 15. |
| | Reamers, 107 Assorted Steel, ¼" to 3¾" dia., a few tapered, 190 lbs. Lot ..... | 19. |
| | Salamander for Coke heating, inside dimensions 22"x22"x24", 48" high. Good as new | 15. |
| | Swaging Machine, Excelsior belt dr., cap 3/16" | 75. |
| | Vises, Machinists 6" Jaw, plain jaw and plain base, some swivel base. Each ..... $7.50 | |
| | Wrenches, 300 lbs. Assorted Steel Shop Wrenches, S, Straight & Box Type. Lot.. | 6. |

**1447 Oliver Bldg., Pittsburgh, Pa.**

# Used Milling Machines

**Send for illustrated list, with prices, of other Milling Machines, Drill Presses, Planers, Lathes, Shapers, Power Presses, Boring Mills, Bolt Machines, Grinders, Turret Lathes, etc., in our stock.**

1—Nearly new Milwaukee No. 3B full Universal, double overarm, single pulley driven, all usual equipment.

1—Nearly new Brown & Sharpe No. 3A Heavy full Universal, single pulley driven, all usual equipment.

1—Nearly new Brown & Sharpe No. 4B Heavy Plain, single pulley driven.

1—Nearly new Cincinnati No. 4 hi-power Plain, all geared spindle, single pulley driven.

1—Nearly new Becker No. C1 Vertical.

1—Nearly new Becker No. B Vertical, rotary table.

2—Nearly new Cincinnati No. 3 Vert.

***Send for Prices and Descriptions***

**Monarch Machinery Company**

**300 North Third Street, Philadelphia, Penna.**

# Lowest Prices!

## and The World's Greatest Stock!

### LATHES

16"x 8' Bradford, q. c. g.
18"x 8' Lodge & Shipley, s. p. d.
21"x12' LeBlond rapid production.
30"x16' LeBlond, q. c. g.

### PLANERS

22"x22"x 5' Gray.
30"x30"x10' Cincinnati.
36"x36"x12' Powell.

### SHEARS

24" throat Morgan double end, capacity 5/16"x24".
Type RT Pels I-beam, 15" cap.
No. 2 Bethlehem rotary, 3/16" cap.
20" Mackintosh bloom.
2½" Chicago Foundry Co. alligator.
5" Carlin alligator.

### GRINDERS

20"x54" Diamond wet surface.
16"x68" Landis crankshaft.
16"x68" Landis universal.
16"x36" Landis universal.
10"x48" Landis universal.
12"x36" Fitchburg plain.
No. 224 Diamond cyl. roll. plain.

### AIR COMPRESSORS (BELT)

58' Curtis vertical.
67' Ingersoll horizontal.
275' & 350' Gardner.
464' Sullivan.
950' Laidlaw.
1750' L. D. & G.

### POWER HAMMERS

80-lb. & 500 lb. Bradley vertical.
500-lb. Beaudry.

### STEAM HAMMERS

600, 800, 1000 and 1500 lb. sgl. frame.
2000, 2500, 4000, 6000 double frame Bement and Chambersburg.

### BOARD HAMMERS

400, 600, 800, 1000, 2000, 2500 & 3000 lb. Pratt & Whitney, Bliss, Union and Chambersburg.

### COLD SAWS

90" Newton cutting-off.
62" Newton cutting-off.
36" Newton cutting-off.
20" Newton cutting-off.

### LOCOMOTIVES

10"x14" Baldwin 36" gauge.
10"x16" Vulcan 36" gauge.
11"x14" Vulcan 36" gauge.
18"x24" Baldwin 4-wheel saddle tank.

### BOILERS & SMOKE STACKS

250 H. P. Standard water tube, 200 lb. pressure.
250 H. P. Wickes vert., 200 lb. pres.
150 H. P. hor. ret. tub., 100 lb. pres.
500' of 18" Stack.
72' of 36" with cast iron base and ladder.
130' of 48".
140' of 60".

### MISCELLANEOUS

Sull. Dia. Pros. Drill. 2" core.
10-ton Morgan Elec. Crane, 73' span.
15-ton Industry Locomotive Crane, 38' boom.
95-ton Bucyrus R. R. Type Steam Shovel.
70-ton Bucyrus R. R. Type Steam Shovel.
No. 6 American Can Co. O. B. I. Punch Press.
72" Colburn Vert. Boring Mill, 2 hds.
16" Betts Slotter.
No. 7-H Becker Lincoln Type Miller.
No. 2½ Hendey Lincoln Type Miller.
No. 2 Wood Tilted Turret Lathes, 1" capacity.
No. 4-B Williams & W. Bulldozer.
2" Curtis Pipe Threading Machine.
6" Saunders Pipe Threading Mche.
7500-30,000 Gal. Storage Tanks.
5000-Gal. Water Pressure Tank 75 lb. pressure.
72,000-Gal. Steel Tower Tank 110' tower.
7000-Gal. Acid Tank Cars.
8000-Gal. Oil Tank Cars.

***Machinery Bulletin No. 209, describing our complete stock, mailed free on request.***

**HARRIS BROTHERS COMPANY**

**35th & Iron Sts., CHICAGO**

# PUNCH PRESSES Immediate Shipment Excellent Condition

No. 169¼ Toledo Toggle Drawing Press, tie rod frame, stroke of plunger 26", stroke outer slide 14".

No. 58½ Toledo straight side tie rod frame, double geared 14" stroke.

No. 104 Consolidated Double Crank.

No. 42 Robinson geared double crank.

No. 18 Bliss Inclinable (four).

No. 3 American Can, O. B. I.

No. 20 Bliss, O. B. I.

No. 2 R. & K. Horn Press.

No. 13 Niagara Horn Press with table.

## OTHER MACHINES (Partial List)

8—⅝"-⅞" Cleveland Model A Screw Mchs., high serial Nos.

2" Cleveland Model A Auto. Screw Machine, Serial 26302.

16"x48" Landis Crank Pin Grinder, self contained.

No. 2 Landis Universal Grinder, nearly new.

No. 6 Becker Vertical Miller, 60" table feed.

No. 6 Fellows Gear Shaper.

No. 3 Kempsmith Plain Miller, excellent condition.

No. 3 Pratt & Whitney Die Sinker.

36" Niles Vertical Boring Mill, 2 heads.

42" Bullard Vertical Boring Mill, motor drive.

20"x10' American Quick Change Geared Head Lathe.

18"x8' Lodge & Shipley Geared Head Lathe.

No. 3 Warner & Swasey Fox Lathe, chasing bar.

No. 119 Bliss Screw Cap Thread Rolling Machine.

No. 2 Wells Auto. Wire Straightener, cap. No. 9 Wire.

No. 2 Waterbury D. S., S. D. Header, like new.

No. 10 Waterbury-Farrell Thread Rollers, (3).

No. 5 Etna Swedging Machines, 2½" cap.

**24" Bullard Vertical Turret Lathe, excellent condition.**

## A. D. White Machinery Co.

**108-114 N. Jefferson St., CHICAGO, ILL.**

# J. J. McCabe's Used Tools

## Are Always Thoroughly Inspected—

by experienced mechanics before they are shipped. Every detail is carefully checked up. You'll profit by getting *good used tools* here because that is all we sell, that is all we buy—*good ones.*

### J. J. McCabe's "2-in-1" Double Spindle Lathes

Why buy two lathes when you need but one "*2 in 1*" that is the equivalent of two? You will pay for only one and still have a 26" or 48" Swing Lathe. We have a special one with a 14' bed that carries the same guarantee as a new one. We can ship it today.

### Other "2-in-1" Lathes in Stock

26/48" swing, x12' bed.
26/48" swing x22' bed.
26/48" swing x28' bed.
24/40"x10' bed "Former Pattern."
26/44"x10' bed "Former Pattern."

### New "High Duty" Lathes in Stock

**Double Back-Gears, Quick Change**

40" Swing, 14' and 18' Beds.
36" Swing, 12' Bed.
30" Swing, 10' and 20' Beds.
24" Swing, 12', 14' and 16' Beds.
21" Swing, 8', 10' and 12' Beds.
18" Swing, 8', 10' and 12' Beds.
15" Swing, 8' Bed

### Lathes

14" sw., 6' bed, Monarch.
18" sw., 6' bed, Monarch.
15" sw., 6' bed, Sebastian.
17" sw., 8' bed, Sydney.
18" sw., 10' bed, McCabe.
24" sw., 14' bed, Prentice.
26" sw., 14' bed, Niles-Bement-P.
30" sw., 20' bed, McCabe.
42" sw., 16' bed, McCabe, geared head, quick change.
50" sw., 20' bed, Pond.
50" swing, 24' bed, Bement-Miles, triple geared.
72" sw. x40' bed, Niles-Bement-P.
80" sw. x46' bed, Putnam, mtr. drive.
110" Swing x42' Bed, Bement-Miles, 5" Blocks.

### Planers

72"x72"x24' Niles, 4 Hds., belt Dr.
48"x48"x30' Putnam, 4 Heads.
48"x48"x14' Pond, 2 Heads.
48"x48"x15' Sellers, 3 Heads.
26"x26"x 6' Niles, 1 Head.

### Boring Mills

8' Niles 2 heads.
72" Gisholt 2 heads.
50" Bul ard 2 heads.
48" Gisholt, 2 heads.
42" Baush.
4¾" Bar Niles Horizontal.
4⅝" Bar Bement Miles Horizontal.
2¾" Bar Bement Miles.

### Miscellaneous Bargains

16" Str. Potter & Johnston Shaper.
18" Stroke Ohio Shaper.
20" Stroke Steptoe Shaper.
No. 2 Cinti Univ. Milling Mche.
1½" Acme Bolt Cutter.
28" Espen-Lucas Cold Saw.
No. 3 Cincinnati Plain Miller.
No. 15 Bliss Press.
No. 3 Baker Keyseater.
No. 4 B. & S. Plain Miller.
24" Stroke N. B. P. Slotter.
21" Turret Lathe, Gisholt Gap.
3x36" Jones & Lamson Tur. Lathe.
No. 1 Greenfield Univ. Grinder.
2½' Arm Carlton Radial Drill.
24" Rockford Drill Presses.
No. 3 Canton Portable Crane.
No. 21½ Bliss Inclinable Press.
42" Throat Perkins Punch.
No. 3½ Greenerd Arbor Press.
50" Throat McCabe P. & S.
60" Throat Hiles & Jones Punch.
No. 2 Sounders Pipe Machine.
10' Bending Rolls.
19" Gap Riveter.
Cold Saws and Cut Off Machines.
Motors from 3 to 35 H. P.
6x6 Racine Hack Saw.
Landis Modern & Iroquois Grinders.

## J. J. McCabe Lathe & Machinery Corp'n

**SINGER BUILDING - - NEW YORK CITY**

# Used Machine Tools

1—42"x42"x12' G. A. Gray Co., Spur-Geared Planer, with two rail heads, power elevator and countershaft for belt drive; fine condition.

1—30" Colburn Vertical Boring Mill, with countershaft arranged for motor drive, with three sets chuck jaws.

1—30" Gisholt Screw Cutting Boring Mill, with change gears, 4-step cone, back gear, double friction countershaft.

1—No. 25 Foote-Burt Heavy Duty Drilling Machine.

1—No. 3 Baker Bros. Keyseating and Slotting Machine, capacity to cut keyways 24" in length by 3" in width, or with chamber hub and extended cutter bars will keyseat 36" long; any work up to 72" in diameter can be chucked with the column in the outside position; largest diameter of cutter bar used 2 7/16".

1—No. 1 Barrett Horizontal Boring Machine, 3½" bar, with two Star facing heads and countershaft.

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***BRANCHES:*** INDIANAPOLIS, IND., HAMILTON, OHIO, DAYTON, OHIO, LOUISVILLE, KY., COLUMBUS, OHIO

# Good Used Tools

Sensitive Drills—Single & Multiple Spindle.
Upright Drills—20", 24" and 26".
Radial Drills—2', 5' and 6'.
Cylinder Grinders—Norton, B. & S., Morse.
Surface Grinders—B. & S.
Lathes—14" to 32".
Millers—Vertical and Horizontal.
Planers—30" and 36".
Presses—Inclinable and Straight Side.
Shapers—16" Steptoe and Queen City.
Screw Machines and Turret Lathes.

**Stocker-Rumely-Wachs Co.**

**117 N. Jefferson St., Chicago, Ill.**

# Opportunity Knocks Again For the Conservative Buyer

## *Real Values in Machine Tools—*

### Lathes

1—48"x21' Pond (Plainfield) with motor.
1—44"x45' S W Putnam (Fitchburg) with motor.
3—32"x12' Pittsburgh.
1—30"x28' Pond (Plainfield) with motor.
1—24"x12' Reed Prentice, geared head, m. d.
1—20"x. 8' Reed.
1—18"x. 8' Reed.
1—18"x10' Schumacher & B., t. a.
2—18"x. 8' Rockford semi q. c.
1—3½x84" Lo-Swing, 2 carriages.

### Milling Machines

1—No. 2 Brown & Sharpe univ.
3—No. 2 Brown & Sharpe plain.
1—No. 2 Brown & Sharpe vertical.
1—No. 3 Brown & Sharpe plain.
1—Becker No. 5-B vertical.
1—Model AB Becker vertical.
2—No. 13-B Brown & Sharpe.
1—No. 2 Cincinnati, single pulley, plain.
1—U. S. hand miller.
1—Blomquist & Eck hand miller.

### Grinders

1—No. 2 Brown & Sharpe cutter.
1—No. 2 Brown & Sharpe surface, with mag. chuck.
1—No. 2 Brown & Sharpe univ.
1—Worcester internal.
1—21x96 Norton plain.
2—10x50 Norton plain.
2—Landis crankshaft.
1—No. 6 Gardner disc.

### Boring Mills—Vertical

1—10' to 16' Niles (Hamilton) with motor.
1—96" Niles.

### Boring Mills—Horizontal

2—No. 2 Rockford horizontal.
1—Blomquist & Eck horizontal.
1—Blomquist & Eck (original) horizontal.

### Planers

1—72"x72"x24' Detrick & Harvey, motor drive.
1—48"x48"x12' Putnam, 3 heads, with motor.
1—36"x48"x18' G. A Gray, 2 hds. on cross rail, 2 side heads, 14 h. p. motor.
1—30"x30"x14' G. A. Gray, 2 hds. on cross rail, 10 h. p. motor.
1—24"x24"x6' G.A. Gray planer.

### Presses

1—S. 304 Ferracute.
1—150-ton high speed steam.
1—No. 108½ Cleveland punch press.
1—78½ Bliss str. sided, 52000 lbs.
1—No. 26 Toledo cam press.
1—No. 78½ Toledo.
1—No. 68 Stoll, straight side.

### Drill Presses and Radial Drills

2—D 2 Colburn.
1—26" Barnes.
1—34" Barnes.
1—3½' Fosdick & Holloway radial
1—6 spindle Allen sensitive.
1—36" Aurora.
1—12 spindle Harrington.
1—6 spindle Foote-Burt.
1—Moline Hole Hog.
1—6' Niles radial.
1—2½' Mueller radial.

### Turret & Screw Machines

2—3¼" Gridley sgle. spdl. autos.
2—Model B, 2" Cleveland autos.
3—Model B, 2" Cleveland automatics, New.
2—Model B, 1¼" Cleveland auto.
2—24" Gisholt turret lathes.
1—No. 6 Foster screw.
2—No. 4 Foster screw.
5—No. 4 Dreses turret lathes.
1—18" Gisholt turret lathe.
1—21" Libby turret lathe.
1—No. 6 Warner & Swasey turret.
1—No. 2 Brown & Sharpe screw.
1—No. 1 Brown & Sharpe screw.
1—No. 4 Woods tilted turret.

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***Offices and Warehouses:* 2261 E. 14th St., Cleveland, Ohio**

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|---|---|
| 38"x16' Niles-Bement-Pond Triple Geared Lathe, q. c., with motor, A1 condition | $1350. |
| 2—30" Cincinnati-Bickford Radials, late type, each | 795. |
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| 42"x20' Niles Triple Geared Lathe | 1200. |
| 48"x28' Niles Triple Geared Lathe | 1575. |
| 42" Bullard Boring Mill | 1250. |
| 6½' Niles Radial, Universal | 1100. |
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3" Lucas Horiz. Boring Mill.
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Pratt & W. Thread Miller.
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No. 4 Verdin Inc. Press.
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12—New 24" Sibley, upright.
2—Baker No. 310.
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1—Baush 6' Radial.
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1—Natco No. 30, 12 spindle.
2—New Baush No. 3, 21 spdl.
1—New Baush No. 4, 56 spdl.
1—Fox, 6 spindle.
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**SCREW MACHINES—Automatic**
12—Gridley 4-spdl., ⅞, 1¼, 1¾".
2—Gridley 4¼", 3¼" single spdl.
3—Gridley 2¼", 4-spindle.
8—Cleveland ⅞, 1¼, 2¼", A.
16—B. & S. Nos. 2 & 6 full auto.
1—Cleveland 7¾" A.
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1—No. 1 B. & S. No. 3 Univ.
1—Cincinnati No. 2 Universal.
2—Rockford No. 1½; No. 2 Pl.
1—LeBlond No. 2½ Plain.
2—Brown & S. Nos. 2 & 4 Plain.
4—Cincinnati No. 4, s. p. d.
1—B. & S. No. 13-B Plain.
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2—New Garvin No. 2 Duplex.
1—Newton Duplex.
1—Van Norman No. ½ Duplex.
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1—Lees-Bradner No. 8 Thread.

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15—Barber-Colman Nos. 3 & 12.
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1—G. & E. 60" spur.
20—Fellows Nos. 61, 6 & 615.
20—Gleason bevel, 6", 11" & 18".
1—Lees-Bradner No. 5A gear generator.
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**PLANERS**
7—Putnam 26x26x8', 2 heads.
1—W. & P. 24x24x10'.
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2—Gray 38x38x20, 3 hds., mtr. dr.
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**GRINDERS**
1—Blanchard No. 16 Surf. m. d.
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7—Norton 6x32, 10x36 & 16x36.
1—Fitchburg 12x54.
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28—Heald Nos. 65, 60 and 70.
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**TURRET and SCREW MCHS.**
10—W. & S. No. 1 Wire Feed.
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1—Warner & Swasey No. 3-A.
1—W. & S. No 4; No. 6 Univ.
4—Foster No. 1-B Universal.
1—New Foster No. 10 Turret.
4—Greenlee 2¼"x26" Turret.
1—J. & L. 2-spindle Turret.
5—Foster No. 4 Screw.
40—B. & S. Nos. 0, 1, 2, 6, w. f.
1—Acme Fox Monitor.
1—W. & S. No. 6 b. g., p. f.
2—P. & W. 1x14" screw.
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2—Hendey 12x5 yoke head.
2—Lodge & S., 30x16, s. p. d.

**Also 500 other tools, such as Shapers, Presses, Bolt Cutters, Broaching Machines, Hot and Cold Saws, Punches and Shears, etc.**

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**Upsetters:**—1", 1½", 2", 2½", 3", 3½", 4".
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Bradley Cushioned Helve, 40 lbs. to 200 lbs., Upright from 30 lbs. to 500 lbs.
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All capacities in depths of throat.
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Single and double spindle from 1" to 3".
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**Of installing a Radial Drill? If so, the following machines are REAL bargains:**

1—2½' Standard type, heavy duty, MUELLER radial drill, gear drive.

1—3' Standard type, heavy duty, MUELLER radial drill, gear drive.

1—4' Standard type, heavy duty, MUELLER radial drill, gear drive.

**Prices will arouse interest**

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**The Mueller Machine Tool Company**
**Radial Drills and Lathes**
**ESTABLISHED 1902 CINCINNATI, O.**

# MOTCH AND MERRYWEATHER THE MACHINERY CO

CLEVELAND
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42" Bullard Boring Mill.

6' American Radial.

36" Cincinnati Bickford Drill.

No. 4 Six Spindle Foote-Burt Drill.

10x24 Norton Grinder.

10x36 Norton Grinder.

No. 16 Blanchard Surface Grinder.

42"x32' American Triple Geared Motor Driven Lathe.

No. 4 Cincinnati Vertical Milling Machine.

No. 26 Toledo Hand Drawing Press with 8" stroke.

24" Gould & Eberhardt Shaper, single pulley drive.

15" Newton Vertical Slotter.

These are twelve of three hundred machines, of every size and description, stocked in our Cleveland warehouse. All overhauled machines carry our guarantee. We invite your inquiries and inspection at any time.

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Air compressor, 1600 cu. ft. cap G. E., complete with 20 h. p. motor a. c.
Bending roll, 110" H. & W. cap. 16 gauge.
Bolt cutter, No. 3—1" Capitol double head auto.
Boring mill, 30" Colburn vert., with 3-jaw combination chuck.
Boring mill, 36" Bullard "New Era" vertical, with side head and 4 jaw chuck.
Drill, slid.hd., 36"Snyder, comp.
Drill, sensitive, No. 1½ Avey 4-spindle, h s., b. b.
Drill, radial, 5' Dreses plain.
Gear shaper, 36" Fellows.
Gear cutter, No. 5—48"x10" B. & S. auto. (spur gears only).
Grinder, plain, 12"x36" Modern.
Grinder, surface, vertical No. 12 Pratt & Whitney.
Grinder, universal, No. 1, 10x24" Brown & Sharpe.
Hammer, bd.drop,1200 lb. Bliss.
Lathe, 28"x24' Schumacher & Boye, arrgd. for motor drive.
Miller, No.2 Clevel'd sgl.pul.dr.
Miller, No. 3 Cincinnati, vert., single pulley drive.
Planer, 30"x30"x8' Cleve., 2 hds.
Press, No.512 Niagara s.s.,s.b.g.
Riveter, 30-ton Hanna vert., 75" reach, 18 gap, cap. 7/16" cold or ⅝" hot rivets.
Saw metal, No. 12-B Higley.
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Slotter, geared, 25" Niles.
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Turret lathe, 18" Libby, sgl. pul. dr., arrgd. for belted motor dr.

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# NEW MACHINERY

**1—No. 4 Baush Multiple Spindle Drill,** 30x46" head, twenty-two 2" spindles.

**1—No. 536 Newton Horizontal Milling Machine,** table 20"x8'.

**1—No. 25 Williams & White Bulldozer.**

# USED MACHINERY

**1—Bement-Niles Planer Type Slab Milling Machine,** table 24"x8'.

**1—No. 536 Newton Horizontal Milling Machine,** table 20"x8'.

**1—Midwest Centrifugal Pump,** 500 gallons per minute, 210' head.

**2—50 H. P General Electric Vertical Motors** for above pump, 1750 R. P. M., 60 cycles, 3 Phase, 440 volt.

**12—Diamond Plow Share Grinding Wheel Stands.**

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**NEW 3 PHASE MOTORS CHEAP. 3 H. P. $57.50; 5 H. P. $67.50**

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12"x 5' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new.
14" x 8' Young.
14" x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Von Wyck, quick change gear, taper attachment
14"x 8' Sidney, double back geared.
16"x 8' Sidney, double back geared.
18"x10' American, quick change.
20"x10' Hamilton, rapid production.
24"x24' Prentice, with raising block.
25"x12' Sidney heavy duty.
28"x 8' Bridgeford, heavy duty.
8x60" & 10x72" Fitchburg Lo-Swing.

## TURRET LATHES and SCREW MACHINES

No. 4 Defiance hand screw machine.
No 4 Woods Tilted Turret.
1½" Mulholland.
2x24 and 3x36 J. & L.
No. 3-B Foster. 5" capacity, new.
Warner & Swasey No. 2.
Nos. 50 & 56 National Acme auto.
6" Gridley single spindle, automatic.

## SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American, tool room.
16" American b. g. crank.
16" O. & S. b. g. crank, new.

## PLANERS

22"x22"x 5' Cincinnati.
24"x24"x 6' Gray.
26"x26"x10' Gray, 1 head.
30"x30"x10' American, 2 heads.
36"x36"x18' Pond.

## PRESSES

No. 3-A Willard-A inclinable.
No. 1 Toledo inclinable.
Nos. 1½, 2, 2½ & 4 Robinson.
Emco, bench, for radio parts.
No. 35 Niagara straight side.
Perkins, dbl. housing, wt. 4,000 lbs.

## DRILLS and RADIALS

3½' Silver, sgl. pulley, gear box dr.
3' & 4½' Morris plain gear box.
4' Universal Radial Drill Co. plain.
Electric drills, Black & Decker.
22", 24", 26", 28" and 32", sliding hd.
20"—24" & 26" Barnes, all geared.
4-spindle Reed sensitive.
Electric drills, Thor, all sizes.

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No. 1 Kempsmith universal.
No. 2 Kempsmith plain.
U. S. and Whitney hand.
No. 25 Becker plain, power feed.
No. 3 Kempsmith univ. and plain.
No. 3 LeBlond, with vertical attach.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 7 Becker Lincoln type.
Oesterlein 24x7½x18 plain.

## GRINDERS

Nos. 1 & 78 W. & M. surface.
No. 2 W. & P. 10x30 universal.
6"x15" Fitchburg plain.
12x36 Cincinnati universal.
12x42" & 16"x30" Landis plain.
36" and 66" Yates plate.
Perfection cylinder.
No. 60 Heald cylinder.
Schmitt cylinder grinder.
No. 3 Ohio universal & tool.
No. 4 Gardner 20" double disc.
No. 20 Bryant, chucking.
Capital internal, new, 2"x2".

## MISCELLANEOUS

Band saw, metal, Klemm.
Hand saws, Napier 4"x4", 10"x10".
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Boring mill, Colburn No. 3, tur. hd.
Boring mill, 54" & 60" Colburn, 2 hds.
Brake, 10', 18-gauge metal.
Broaching machine, No. 3 LaPointe.
Cold saw, Burr, 3" capacity.
Compressors, 6x6, 8x8 and 12x10.
Drawing tables, adjust., 42"x6' top.
Gear cutter, 26" No. 3 B. & S.
Gear millers, Bilton No. 1, (5).
Hammer, 40 lb. Bradley, helve.
Hammer, 150 lb. Standard drop.
Oil separator, Springfield.
Pipe machines, 2", 4" & 6".
Pumps, Gould triplex, 6½x8" & 7x8".
Punch & shear ⅞ by ⅞, 10" throat.
Riveting hammers, type B, Nos. 2, 3, 4 & 5-A.
Scale, 1500 lb. Toledo, dial type.
Sceleroscope, Shore.
Shear, No. 296 Robinson, 14 ga., 5'
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell 60".
Tapping mche., ⅝" Rickert-Shafer.
Tapping machine, Acme 6-spindle.
Threading mche., W. & P. 2-spindle.

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**COLUMBUS DEPT. H. OHIO**

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## The Co-Operative Machinery Co.

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Used 20" Drills, plain and back geared. ..... from $40 to $ 85.
Several Used Tool and Cutter Grinders, ..... from $150 to 300.
Used Capital Internal Grinder, capacity 3/16" to 2"x2", practically new, with water equipment ..... 290.
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Used Porter-Cable Mfg. Lathe, single pulley drive, high speed, practically new ..... 275.
Used No. 12 B. & S. Plain Production Miller, good condition 180.
Used Grant Lincoln Type Geared Head Milling Machine, good heavy production machine ..... 150.
Used No. 4½ Crosby C type Punch Press, bolster plate, 21"x30", flywheel 33½"x4", good condition ..... 250.
No. 1 Garvin Screw Mch., ½" cap. thru collet, practically new.. 195.
Used No. 6 Foster Screw Mch., motor driven, 220 volt, 3 phase, 60 cycle, bar feed & several hundred dollars worth of extra equipment. Good shape. Can be inspected under power. 675.
Used 4-spindle Barnes Drill, each spindle equipped with silent chain drive, capacity of standard 20" drill, spindle bored to No. 3 taper. Condition good ..... 250.

**This Is Only A Partial List**

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24-26" Libby turret lathe ..... $2650.
26" No. 14 Besly Disc Grinder ..... 450.
10" Curtis & Curtis (Forbes) pipe machine 500.
5' Niles B. P. (Ridgeway) Radial Drill.. 1700.
16"x6' Cincinnati, severe duty engine lathe 600.
36"x36"x12' Bickett planer, 1 head, belted motor drive ..... 1300.
36" Cleveland circular saw, 12" capacity 475.
No. 4 J. N. LaPointe Broaching machine 525.

## Machine Tools Sales Company

**235 Commercial Trust Bldg., Philadelphia**

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# Simmons Machine Tool Corp.

**NEW YORK** 149 Broadway — **ALBANY** 1212 Troy Road — **BUFFALO** 88 Exchange St.

### Milling Machines

No. 5 Cincinnati High Power Plain.
No. 2 Cincinnati High Power Plain.
No. 4 Cincinnati High Power Vert.
No. 3 Cincinnati High Power Vert.
No. 2 Cleveland All Geared Plain.
No. 1 Cleveland All Geared Plain.
No. 20 Garvin Vertical New.
No. 22 Garvin Vertical New.
No. 15 Garvin Vertical 3 Spindle.
No. 3 Davis Drum Type Cont.
No. 3 Garvin Duplex.

### Lathes

36"x60' Bridgeford All Geared Head.
36"x34' Bridgeford All Geared Head.
36"x22' Bridgeford All Geared Head.
36"x60' Bridgeford Boring Lathe.
38"x56' LeBlond Boring.

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No. 2-B Standard Dbl. Act.
No. 55 DAG Ferracute Drawing.
21 Ton R. D. Wood Hydraulic.
No. 2 B. A. Gier Straightening.
No. 7 Myers Bench Arbor.
No. 4 Greenerd Arbor.

### Automatics

No. 00 B. & S. Automatics.
⅞" Cleveland Single Spindle.
2¼" Gridley 4 Spindle.
¾" Gridley 4 Spindle.
2¼" Gridley 1 Spindle.
3¼" Gridley 1 Spindle.
2" Cleveland Model A.
2" Cleveland Model C.

### Turret Lathes

24" Vertical, Side Head.
34" Vertical, Bertram.
36" Vertical, Side Head.
18" Libby High Duty.
No. 4 Warner Swasey.
No. 3 Warner Swasey.
No. 1 Warner Swasey.
2¼"x11 Acme, G. F. H.
2¼"x10 Milholland, G. F. H.
No. 2½ Garvin, G. F. H.
No. 5½ Bardons & Oliver.

### Threaders

2" Landis Bolt Threader.
6" Bignall & Keeler Pipe.
3" Landis Bolt, Lead Screw.
4" Williams Pipe Threader.
No. 2 Garvin Tapper B. G.
1½" Acme Six Spindle Tapper.

### Radial Drills

72" American Gear Box.
72" Bickford Gear Box.
60" American Triple Geared.
60" Bickford Gear Box.
48" Bickford Gear Box.
28" American Sensitive.
24" Mueller Gear Box.

### Vertical Boring Mills

42" Bullard 2 Heads.
48" Colburn 2 Heads.
51" Bullard 2 Heads.
54" Colburn 2 Heads.
72" Gisholt 2 Heads.
72" Niles 2 Heads.
84" Pond Extra Heavy.
144" Niles, 2 Heads.

### Grinding Machines

No. 2 Brown & Sharpe Surface.
24'-32"x10' Norton Plain.
20"x72" Brown & Sharpe Universal.
14"x96" Norton Plain.
14"x72" Norton Plain.
14"x50" Norton Plain.
10"x72" Norton Plain.
6"x32" Norton Plain.
No. 1 Brown & Sharpe Universal.
No. 14 B. & S. Wide Wheel.

### Miscellaneous

48" Cleveland Rotary Planer.
No. 3½ Baker Keyseater MD.
1000 lbs. Rennerfelt Electric Furnace.
Eastman Photostat No. 0.
3F Lees Bradner Thread Milling Mch.
Garvin Die Slotter, New.
Ingersoll-R. 2 Stage, XB Compressor.
40-A Thompson Butt Welder.
300 lb. Bradley Upright Hammer.
1000 lb. McDougal-Potter single leg Forging Hammer.
28" Queen City Shaper.
60"x60"x22' Pond Planer.
24"x24"x12' American Planer.
36"x36"x12' D. & H. Openside.
5A Lees-Bradner Gear Hobbers.
16'x12' Gleason Gear Planer.
No. 3 B. & S. Automatic Cutter.
No. 3 Hilles Jones Guillotine Shear.
No. 2 Carlin Alligator Shear.
2½" Acme Upsetter.
3" Acme Upsetter.
9"x8" Ingersoll ERI Compressor.

IF ANY of us could tell just who and where are our next year's customers, what juicy savings we could make in our selling expenses. Because we don't and can't know, is it not a primary duty we owe ourselves to see to it that every one who might buy of us should know we are on our toes and anxious to sell him? In a word, should we not plan our advertising in such a way that all our possible customers may know of us and of what we are seeking to sell them?

In the machine tool line such advertising necessarily must include the book you are now reading, because no other medium completely covers the field. A little better than half of it may be covered by using all other available media, but why do a half-way job, when it is so very simple and inexpensive to do a complete one?

# Classified Finding Index

**Air Guns**
Powell Co., Wm., Cincinnati

**Angle Plates**
Germanow-Simon Mch. Co., Rochester, N.Y.

**Arbors, Solid**
Nicholson & Co., W. H., Wilkes-Barre, Pa.

**Auto-Gages For Dies**
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

**Automatics**
National Acme Company, Cleveland, O.
New Britain Machine Co., New Britain, Conn.

**Balancing Ways**
Anderson Bros. Mfg. Co., Rockford, Ill.
Bowsher Co., N. P., South Bend, Ind.

**Balls, Bearing and Burnishing**
Abbott Ball Co., Hartford, Conn.

**Band Saw Machines, for Metal**
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.

**Barrels, Tumbling**
Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago

**Belt Shifters**
Artisan Mfg. Co., Cincinnati, O.

**Bench Legs, Steel**
New Britain Mche. Co., New Britain, Conn.

**Bending Machines, Hand and Power**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mche. Co., T.H.41/E. 31st., N.Y.
Lourie Mfg. Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia

**Bending Rolls**
Hendley & Whittemore Co., Beloit, Wis.

**Bolt and Nut Machinery**
Economy Engineering Co., Willoughby, O.
Foote-Burt Co., Cleveland, O.

**Boring Bars**
Pedrick Tool & Machine Co., Philadelphia

**Boring Bars, Cylinder**
Pedrick Tool & Machine Co., Philadelphia

**Boring, Drilling & Milling Machines**
Landis Tool Co., Waynesboro, Pa.

**Boring Machines, Horizontal**
Avey Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia
Rockford Drilling Machine Co., Rockford, Ill.

**Burnishing Equipment, Ball**
Abbott Ball Co., Elmwood, Conn.

**Bushings, Drill Jig**
Ex-Cell-O Tool & Mfg. Co., Detroit, Mich.

**Case-Hardening Compound**
Kasenit Company, 2 & 4 Stone St., New York

**Chucking Machines**
National Acme Company, Cleveland, O.
New Britain Mche. Co., New Britain, Conn.
Springfield Machine Tool Co., Springfield, O.

**Chucks, Collet**
Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Berteau Ave., Chicago

**Chucks, Drill**
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Jacobs Mfg. Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago
Titan Tool Co., Erie, Pa.

**Chucks, Drill and Tap**
Peter Bros. Mfg. Co., Algonquin, Ill.
Scully-Jones & Co., 2012 W. 13th, Chicago

**Chucks, Keyway Cutting**
Scully-Jones & Co., Ry. Exch. Bldg., Chicago

**Chucks, Magnetic**
J. & H. Electric Co., Inc., Providence, R. I.

**Chucks, Wrenchless**
Thomas Elevator Co., 31 S. Hoyne Ave., Chicago

**Clamps, Die**
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

**Clutches, Friction**
Conway Clutch Co., Cincinnati, O.
Edgemont Machine Co., Dayton, O.

**Cold Saws**
Burke Machine Tool Co., Conneaut, Ohio
Peter Bros. Mfg. Co., Algonquin, Ill.

**Collets**
Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Berteau Ave., Chicago

**Contract Work Wanted**
Burke Machine Tool Co., Conneaut, O.

**Counterbores and Spot Facers**
Glenzer Co., J. C., Detroit, Mich.

**Couplings, Friction Clutch**
Conway Clutch Co., Cincinnati, O.

**Cranes, Portable**
Canton Foundry & Mche. Co. Canton, Ohio

**Crank Pin Turning Machine**
Pedrick Tool & Machine Co., Philadelphia

**Crankshafts**
Leard Co., Wm., New Brighton, Pa.

**Cutters, Keyseating**
Davis Keyseater Co., Rochester, N. Y.
Scully-Jones & Co., 2012 W. 13th, Chicago

**Cutters, Milling**
Genesee Mfg. Co., Rochester, N. Y.

**Cutting-Off Machines**
Peter Bros. Mfg. Co., Algonquin, Ill.

**Cylinder Boring Machines, Portable**
Pedrick Tool & Machine Co., Philadelphia

**Demagnetizers**
J. & H. Electric Co., Inc., Providence, R. I.

**Dial Indicators**
Federal Products Corp'n, Providence, R. I.

**Die Heads, Threading, Self Opening**
National Acme Company, Cleveland, O.

**Die Sets**
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

**Drill Racks**
Peerless Machine Co., Racine, Wis.

# Classified Finding Index

**Drilling Machine Heads, Multiple**
United States Drill Head Co., Cincinnati

**Drilling Machines, Bench**
Ames Co., B. C., Waltham, Mass.
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

**Drilling Machines, Horizontal**
Rockford Drilling Machine Co., Rockford, Ill.

**Drilling Machines, Multiple Spindle**
Avey Drilling Machine Co., Cincinnati
Foote-Burt Co., Cleveland, O.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

**Drilling Machines, Portable Electric**
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N.A., 5001 N. Lincoln St., Chicago
Wisconsin Electric Co., Racine, Wis.

**Drilling Machines, Post**
Mueller Machine Tool Co., Cincinnati

**Drilling Machines, Radial**
Mueller Machine Tool Co., Cincinnati
Taylor & Fenn Co., Hartford, Conn.

**Drilling Machines, Sensitive**
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Muehlmatt, Adolph, Cincinnati, O.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.
Wisconsin Electric Co., Racine, Wis.

**Drilling Machines, Vertical**
Avey Drilling Machine Co., Cincinnati
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Oesterlein Machine Co., Cincinnati, O.
Rockford Drilling Machine Co., Rockford, Ill
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

**Drills, Twist**
Cleveland Twist Drill Co., Cleveland, O.

**Dust Handling Equipment**
Knickerbocker Co., Jackson, Mich.

**Emery Wheel Dressers and Cutters**
Precision Truing Machine & Tool Co., Cincinnati, O
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

**Feeders, Oil and Soda Water**
New Britain Machine Co., New Britain, Conn.

**Filing Machines, Die**
Ames Co., B. C., Waltham, Mass.

**Filing Room Equipment**
Wardwell Mfg. Co., Cleveland, O.

**Flexible Shafts**
Strand Co., N.A., 5001 N. Lincoln St., Chicago

**Forgings, Hollow Bored**
American Hollow Boring Co., Erie, Pa.

**Furniture, Machine Shop**
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

**Gauges, Dial**
Ames Co., B. C., Waltham, Mass.
Federal Products Corp'n, Providence, R. I.

**Gauges, Piston and Piston Ring**
Federal Products Corp'n, Providence, R. I.

**Gauges, Thread**
Federal Products Corp'n, Providence, R. I.

**Gear Generators**
Lees-Bradner Co., Cleveland, O.

**Gear Grinders**
Lees-Bradner Co., Cleveland, O.

**Gear Testers**
Lees-Bradner Co., Cleveland, O.

**Gears**
Boston Gear Works Sales Company, Norfolk Downs, Mass.

**Grinding Machines, Belt**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Peerless Surfacing Machine Co., Troy, N. Y.

**Grinding Machines, Bench**
Bodine Electric Co., 2256 W. Ohio St., Chgo.
Gallmeyer & Livingston Co., Grand Rapids, Mich.

**Grinding Machines, Cutter, Reamer and Tool**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Oesterlein Machine Co., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

**Grinding Machines, Cylindrical**
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

**Grinding Machines, Die**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

**Grinding Machines, Disc**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Porter Cable Machine Co., Syracuse, N. Y.

**Grinding Machines, Drill**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
La Salle Tool Co., La Salle, Ill.
Wilmarth & Morman Co., Grand Rapids, Mich.

**Grinding Machines, Face**
Taylor & Fenn Co., Hartford, Conn.

**Grinding Machines, Internal**
Landis Tool Co., Waynesboro, Pa.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

**Grinding Machines, Portable Electric**
Bodine Electric Co., 2256 W. Ohio St., Chgo.
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.
Service Tool, Die & Mfg. Co., 2256 Walnut Street, Chicago.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N.A., 5001 N. Lincoln St., Chgo
Wisconsin Electric Co., Racine, Wis.

# Jig Bushings

*See our Exhibit at the National Steel Treaters Exposition, Cleveland—Space 287*

***Fill your Requirements the "Low Cost" Way—from the 2534 XLO Standard Sizes***

It is ***Quantity Production*** by advanced manufacturing methods that enables you to buy XLO quality Drill Jig Bushings at the very lowest cost—for less than the expense of making your own!

The nation's most prominent manufacturers endorse the uniform high quality of this accurate, long-life, tool steel product.

Specify XLO! Economy, and the convenience of instant replacement, are the result of standardizing on XLO Bushings. ***Write us for XLO Data Sheets, giving standard sizes and prices!***

**EX-CELL-O**

**TOOL & MANUFACTURING CO.**

High Speed Internal Grinding Spindles — XLO — Drill Jig Bushings

**1469 East Grand Boulevard, Detroit**

# Classified Finding Index

**Grinding Machines, Snagging**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchs. & T. Co., Grand Rapids, Mich.

**Grinding Machines, Surface**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
La Salle Tool Co., La Salle, Ill.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

**Grinding Machines, Tap**
Gallmeyer & Livingston Co., Grand Rapids, Mich.

**Grinding Machines, Tool**
Taylor & Fenn Co., Hartford, Conn.

**Grinding Machines, Universal**
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

**Hack Saw Blades**
Peerless Machine Co., Racine, Wis.

**Hack Saw Machines**
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

**Hammers, Air**
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

**Hammers, Riveting**
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

**Hoists**
Ford Chain Block Co., Philadelphia, Pa.
Thomas Elevator Co., 21 S. Hoyne Ave., Chicago

**Hoists, Portable**
Canton Foundry & Machine Co., Canton, Ohio

**Keys, Machine**
Leard Co., Wm., New Brighton, Pa.

**Keyseating Machines**
Burr & Son, John T., Brooklyn, N. Y.
Chattanooga Mchy. Co., Chattanooga, Tenn.
Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

**Lathe Accessories and Attachments**
Cisco Machine Tool Co., Cincinnati, O.
Sidney Machine Tool Co., Sidney, O.

**Lathes, Automatic Turret**
National Acme Company, Cleveland, O.

**Lathes, Bench**
Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Berteau Ave., Chicago
Monarch Machine Tool Co., Sidney, O.

**Lathes, Engine**
Boye & Emmes Mch. Too Co., Cincinnati, O.
Carroll Mch. Tool Co., A. V., Cincinnati, O.
Cincinnati Lathe & Tool Co., Cincinnati, O.
Cisco Machine Tool Co., Cincinnati, O.
Hardinge Brothers, Inc., 1770 Berteau Ave., Chicago
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.
Mueller Machine Tool Co., Cincinnati, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Sebastian Lathe Co., Cincinnati, O.
Sidney Machine Tool Co., Sidney, O.
Springfield Machine Tool Co., Springfield, O.

**Lathes, Fox Monitor**
Barker Co., Wm., Covington, Ky.

**Lathes, Gap**
Carroll Mch. Tool Co., A. V., Cincinnati, O.

**Lathes, Short Bed**
Artisan Mfg. Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Sidney Machine Tool Co., Sidney, O.

**Lathes, Turret**
Monarch Machine Tool Co., Sidney, O.

**Mandrels, Expanding**
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

**Mandrels, Solid**
Nicholson & Co., W. H., Wilkes-Barre, Pa.

**Milling Attachments**
Burke Machine Tool Co., Conneaut, Ohio
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Oesterlein Machine Co., Cincinnati, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Taylor & Fenn Co., Hartford, Conn.

**Milling Machines, Bench**
Ames Co., B. C., Waltham, Mass.
Burke Machine Tool Co., Conneaut, Ohio

**Milling Machines, Hand**
Burke Machine Tool Co., Conneaut, Ohio
U. S. Machine Tool Co., Cincinnati, O.

**Milling Machines, Horizontal**
Oesterlein Machine Co., Cincinnati, O.

**Milling Machines, Plain**
Burke Machine Tool Co., Conneaut, Ohio
Gallmeyer & Livingston Co., Grand Rapids, Mich.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

**Milling Machines, Portable**
Pedrick Tool & Machine Co., Philadelphia

**Milling Machines, Spline**
Taylor & Fenn Co., Hartford, Conn.

**Milling Machines, Universal**
LeBlond Mch. Tool Co., R. K., Cincinnati, O.

**Milling Machines, Vertical**
Burke Machine Tool Co., Conneaut, Ohio
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

**Mills, Adjustable Hollow**
Genesee Mfg. Co., Rochester, N. Y.

**Motors, Electric**
Reliance Electric & Eng. Co., Cleveland
Wisconsin Electric Co., Racine, Wis.

**Nuts, Plain or Castellated**
National Acme Company, Cleveland, O.

**Oil Cups**
Gits Bros. Mfg. Co., 1940 S. Kilbourn Av., Chicago

**Oil Extractors**
Barrett Co., Leon J., Worcester, Mass.
Tolhurst Machine Works, Troy, N. Y.

**Pattern Shop Machinery**
Towsley Mfg. Co., John T., Cincinnati

**Pins, Leader And Dowel**
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

# Classified Finding Index

**Pipe Bending Machines**
Pedrick Tool & Machine Co., Philadelphia

**Piston Machines**
National Acme Company, Cleveland, O.

**Piston Ring Machines**
National Acme Company, Cleveland, O.

**Planers, Openside**
Cleveland Planer Co., Cleveland, O.

**Planers, Valve Seat, Portable**
Pedrick Tool & Machine Co., Philadelphia

**Polishing and Buffing Machines**
Cisco Machine Tool Co., Cincinnati, O.
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
New Britain Machine Co., New Britain, Conn.
Wilmarth & Morman Co., Grand Rapids, Mich.
Wisconsin Electric Co., Racine, Wis.

**Presses, Arbor**
Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Sheldon Machine Co., 3251 Cottage Grove Ave., Chicago

**Presses, Broaching**
Lourie Mfg. Co., Springfield, Ill.

**Presses, Foot**
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

**Presses, Power**
Hendley & Whittemore Co., Beloit, Wis.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

**Presses, Punch**
LaSalle Machine Works, 3013 S. LaSalle St., Chicago
Lewthwaite Mchs. Co., T. H., 417 E. 31st., N. Y.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

**Presses, Screw**
Jarecki Mchs. & T. Co., Grand Rapids, Mich.
Lourie Mfg. Co., Springfield, Ill.
Towsley Mfg. Co., John T., Cincinnati

**Pulley Machinery**
Avey Drilling Machine Co., Cincinnati

**Pulleys, Iron, Solid and Split**
Conway Clutch Co., Cincinnati, O.

**Pumps, Lubricant**
Ruthman Machinery Co., Cincinnati, O.

**Punch Press Feeds**
Rockford Iron Works, Rockford, Ill.

**Punch, Shear and Bender, Hand**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

**Punches, Hand**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mchs. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

**Punches, Power**
Hendley & Whittemore Co., Beloit, Wis.

**Punches and Dies**
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mchs. Co., T. H., 417 E. 31st., N. Y.
Rockford Iron Works, Rockford, Ill.

**Racks, Bar Stock**
New Britain Machine Co., New Britain, Conn.

**Reamers**
Cleveland Twist Drill Co., Cleveland, O.

**Reamer Holders**
Nicholson & Co., W. H., Wilkesbarre, Pa.

**Reels, Extension**
Cincinnati Specialty Mfg. Co., Cincinnati, O.

**Riveting Machines**
Grant Mfg. & Mchs. Co., Bridgeport, Conn.

**Rod Cutters**
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Bench Machine Tool Co., Philadelphia, Pa.
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mchs. Co., T. H., 417 E. 31st., N. Y.

**Saw Sharpening Machines**
Warnwell Mfg. Co., Cleveland, O.

**Scraping Machines, Hand & Pneumatic**
Anderson Brothers Mfg. Co., Rockford, Ill.

**Screw Driving Machines, Automatic**
Reynolds Machine Co., Massillon, Ohio

**Screw Machine Products**
National Acme Company, Cleveland, O.

**Screw Machines, Automatic**
National Acme Company, Cleveland, O.
New Britain Mchs. Co., New Britain, Conn.

**Screws**
Economy Screw Corporation, 5213 Ravenswood Ave., Chicago
National Acme Company, Cleveland, O.

**Second-Hand Machinery**
Akron Equipment Co., Akron, O.
Baker, J. C., Columbus, O.
Bardons & Oliver, Cleveland, O.
Barker & Co., Wm., Covington, Ky.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mchy. Co., 50 Church St., New York
Botwinik Brothers, New Haven, Conn.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Cincinnati Automatic Mch. Co., Cincinnati
Cincinnati Lathe & Tool Co., Cincinnati, O.
Cincinnati Machinery & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Clinton Mchy. Co., 128 S. Clinton, Chicago
Co-Operative Machinery Co., Cleveland, O.
Donahue Steel Products Co., 204 N. Jefferson St., Chicago
Eastern Machinery Co., Cincinnati, O.
Empire Machinery Exchange Company, Inc., Cleveland, Ohio
Easley Machinery Co., E. L., 555 Washington Blvd., Chicago
Fitzsimmons-Cole Mchy. Co., Pittsburgh, Pa.
Foster Machinery Co., Cleveland, O.
Haetten & Co., J. E., Inc., 50 Church St., New York
Harris Bros. Co., 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Hill, Clarke & Co., Inc., Boston, Mass.
Hyman & Sons, Joseph, Philadelphia
Industrial Plants Corporation, 25 Church St., New York
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, O.
Kinsey Co., E. A., Cincinnati, O.
Lucas & Son, J. L., Inc., Bridgeport, Conn.
Little Co., W. P., Cleveland
McCabe Lathe & Machinery Corp., J. J., 149 Broadway, New York
McCoy-Brandt Mchy. Co., Pittsburgh, Pa.
McDonald Machinery Co., St. Louis
McMullen Mchy. Co., Grand Rapids, Mich.
Machine Tools Sales Co., Philadelphia, Pa.
Marr-Galbreath Mchy. Co., Pittsburgh, Pa.
Marshall & Huschart Machinery Co., 17 S. Jefferson St., Chicago

# Classified Finding Index

**Second-Hand Machinery—Continued**

Mid-West Machine Tool & Supply Co., Davenport, Ia.
Molitor Machy. Co., Chas., 118 S. Clinton St., Chicago
Monarch Machinery Co., Philadelphia, Pa.
Morey and Co., Inc., 408 Broome St., N. Y.
Morris Machine Tool Co., Cincinnati, O.
Motch & Merryweather Machinery Company, Cleveland, O.
Niles-Bement-Pond Co., 111 Broadway, N. Y.
Norton-Broadway Mchy. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Oliver Chilled Plow Works, South Bend, Ind.
Osborne & Sexton Machy. Co., Columbus, O.
Ovitt & Co., D. C., Cleveland, O.
Pasman Bros., 705 W. Washington, Chicago
Peninsular Machinery Co., Detroit, Mich.
Queen City Machine Tool Co., Cincinnati, O.
Reeve-Fritts Co., 37 S. Desplaines, Chicago
Reliance Mchy. Sales Co., Pittsburgh, Pa.
Rosenfeld Machinery Co., 942 W. Lake St., Chicago
Russell Machine Co., Pittsburgh, Pa.
Saltman, B. L., 524 W. Van Buren Street, Chicago
Simmons Machine Tool Corp., Albany, N. Y.
Smith Machinery Co., H. A., Syracuse, N. Y.
Star Foundry Co., Albert Lea, Minn.
Stocker-Rumely-Wachs Co., 117 N. Jefferson St., Chicago
Stoehr Mchy. Co., A. M., 844 N. Wells St., Chicago
Strafer, A. F., 30 Church St., New York
Strong, Carlisle & Hammond Co., Cleveland
Syracuse Supply Co., Syracuse, N. Y.
Tubor, Velick & Co., Inc., Lake & Desplaines Sts., Chicago
Washburn Co., 6126 S. LaSalle, Chicago
Wertman, M. A., Cleveland, O.
Winterer, Herman L., Philadelphia
White Machy. Co., A. D., 108 N. Jefferson St., Chicago

**Shafts, Flexible**

Stow Flexible Shaft Co., Philadelphia, Pa.

**Shafts, Steel**

American Hollow Boring Co., Erie, Pa.

**Shaping Machines**

Osborne & Sexton Machy. Co., Columbus, O.
Rhodes Mfg. Co., Hartford, Conn.
Smith & Mills Co., Cincinnati
Springfield Machine Tool Co., Springfield, O.

**Shears, Hand**

Armstrong-Blum Mfg. Co. 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Machine Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

**Shears, Power**

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**Spacing Washers**

Detroit Stamping Co., Detroit, Mich.

**Spindles, Grinding**

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**Spindles, Air Driven, High Speed**

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Chicago Wire Chair Co., 619 N. La Salle St., Chicago

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Avey Drilling Machine Co., Cincinnati
Bench Machine Tool Co., Philadelphia, Pa.
Burke Machine Tool Co., Conneaut, Ohio
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Leland-Gifford Co., Worcester, Mass.
Whitney Metal Tool Co., Rockford, Ill.

**Taps, Threading, Collapsing**

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**Thread Millers**

Lees-Bradner Co., Cleveland, O.

**Thread Milling Attachments**

Cisco Machine Tool Co., Cincinnati, O.

**Threading Tools**

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Hart Mfg. Co., Cleveland, O.

**Tool Holders**

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

**Tool Racks**

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**Tools, Lathe and Planer**

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

**Tools, Machinists'**

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

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**Valves**

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Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Germanow-Simon Mch. Co., Rochester, N. Y.
Thomas Elevator Co., 31 S. Hoyne Ave., Chicago

**Vises, Machinists'**

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Western Tool & Mfg. Co., Springfield, O.

**Vises, Milling Machine**

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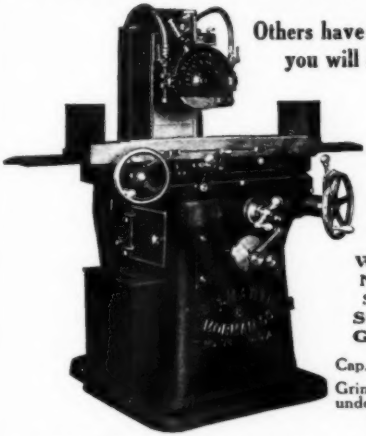
# "A perfect Surface Grinder"



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Lightness with rigidity and rigidity with lightness are features which are outstanding in the construction of these stands. Their use has proven to be more than a convenience, for their durability has also proven them to be an economy. They can be furnished with either two or three shelves, with or without drawer and with casters.

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